# NEW EQUIPMENT DIGEST

A Penton Publication

December, 1959

Volume 24—Number 12


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CHECK AND PASS ALONG

| ✓ | NAME | See No. |
|---|---|---|
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| | | |
| | | |

Use Inquiry Slips—Pages 16 and 80

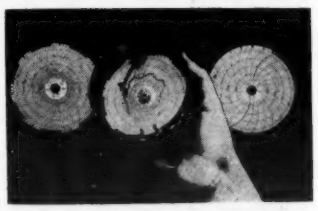
EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

## FIRE DETECTOR
### self-contained unit is automatic

Sight glass in the easily installed, self - contained Falcon automatic fire detector shows level of colored liquefied Freon gas for quick determination of its operating condition. The S Series unit operates automatically at temperatures of 136 or 174° F. When the heat of a fire reaches the rated temperature, the detector gives a loud, piercing warning that is audible over considerable distances. The UL-approved unit can be installed singly or interconnected with tubing in a system. Made by **Falcon Alarm Co.**, 243 Broad St., Summit, N. J.

▲ For more details circle **NED-1 M9** on enclosed inquiry slip ▲

## RECORDING THERMOMETER
### equipped with a dry stylus



Small enough to be packed with goods being shipped, this low cost recording thermometer records time and temperature. Dry stylus or scriber permits its use at high or low temperatures. It can be used in any type of conveyance or location in any industry. For wet environments, encasement in a thin polyethylene bag is possible. Thermometer has a spring wound clock movement with 24-hr or 7-day ranges and 20 to 200° F or −40 to 160° F temperature ranges. Dimensions are 3 15/16 in. diameter by 2⅞ in. high. Chart diameter is 3⅜ in. and weight is 14 oz. Price is $37.50. Made by **Pacific Transducer Corp.**, 11836 W. Pico Blvd., Los Angeles 64, Calif.

▲ For more details circle **NED-2 M9** on enclosed inquiry slip ▲

## OFFSET REPRODUCTION MASTERS
### made with standard copying camera

Inexpensive paper masters for short run offset reproduction can be made photographically with a standard copying camera from any printed, typed, written, or drawn original by the Ektalith method. Master is produced in 2 min in enlarged, reduced, or same size. Using a microfilm enlarger, method also produces master from positive microfilms. Equipment line includes a loader-processor for room-light use, two processors for use with darkroom cameras, and a copy unit which can be used with any of the three. Made by **Eastman Kodak Co.**, 343 State St., Rochester 4, N. Y.

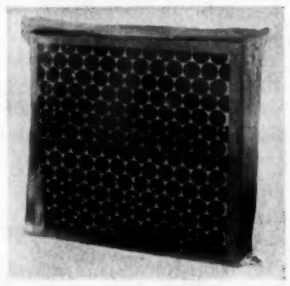
▲ For more details circle **NED-3 M9** on enclosed inquiry slip ▲

## TEMPERATURE INDICATORS
### in stick, pellet, and liquid form

Choice of ratings from 113 to 2000° F is provided in Thermomelt temperature indicators, used for heat treating and heat processing. Stick, pellet, and liquid form indicators are used on the surface to be heated. When the desired temperature is reached, the mark or pellet quickly liquefies. Stick form comes in a metal holder, the liquid is packaged in a brush top bottle, and pellets are packaged 20 to a plastic tube. Made by **Markal Co.**, 3052 W. Carroll Ave., Chicago 12, Ill.

▲ For more details circle **NED-4 M9** on enclosed inquiry slip ▲

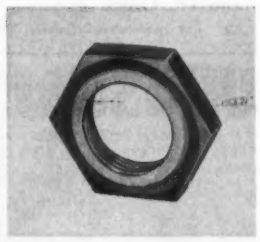
## DISPOSABLE ODOR FILTER
### activated carbon unit cleans air



Efficient odor removal, plus air cleaning action, is provided by AAF disposable odor filters. Used in almost any situation where contaminants in vapor form should be removed from an enclosed space, the activated carbon filters are offered in four standard sizes to fit standard 2-in. frames. Units are sealed in vaporproof cartons and protected from odor absorption while in shipment or storage. Made by **American Air Filter Co.**, 215 Central Ave., Louisville 8, Ky.

▲ For more details circle **NED-5 M9** on enclosed inquiry slip ▲

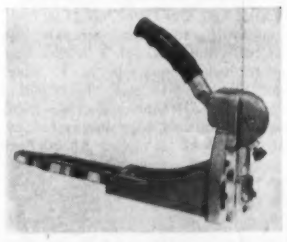
## SEALING NUT
### prevents threaded pipe joint leaks



Installing this Tef-Seal nut with the usual pipe connection fittings prevents leaks in the threaded joint. Nut will also serve as an economical substitute for straight thread O-ring boss fittings using original female pipe ports, and gives positive seal on directional fittings such as tees and elbows. It is available in nine sizes to fit pipe threads from ⅛ to 2 in. Made by **Weatherhead Co.**, Ft. Wayne Div., 128 W. Washington Blvd., Ft. Wayne, Ind.

▲ For more details circle **NED-6 M9** on enclosed inquiry slip ▲

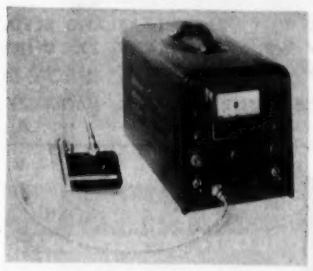
## PORTABLE CARTON STAPLER
### has penetration and clinch control



Hand Boxer portable carton stapling machine has a jamproof, free-floating magazine which holds two clips or 100 staples to minimize reloading time. Nonslip handle, high impact steel anvils, and an aluminum chassis are design features. A dial selects eight positions of full or blind penetration, controlled to within 1/32 in. Another knob sets loose or tight clinch. Made by **International Staple & Machine Co.**, 801 E. Herrin St., Herrin, Ill.

▲ For more details circle **NED-7 M9** on enclosed inquiry slip ▲

## ELECTRONIC COMPARATOR
### checks small part dimensions



Portable, compact, electronic RCA Limit Signaling Comparator will make accurate spot checks of small parts dimensions during production runs. Unit plugs into 110-v outlet, operates on radio frequency, and is instantaneous in response. Operator observes only the registered high, low, and acceptable limit lights on the panel. Gage head is adjusted to the size of the part. Nine gage heads permit direct readings from 0.000050 to 0.001 in. per dimension. Standard RCA air-electronic kit makes it possible to use the air-gaging method. Made by **Radio Corp. of America**, Industrial & Automation Equipment, 12605 Arnold Ave., Detroit 39, Mich.

▲ For more details circle **NED-8 M9** on enclosed inquiry slip ▲

## ALUMINUM REPAIR MATERIAL
### will not chip, crack, shrink, peel

Hard, corrosion-proof, waterproof, metallized surface is formed by Devcon Aluminum, a moldable metal in paste form. It hardens with a strong, permanent bond to metal, wood, plaster, glass, or plastic. The compound will spread smoothly with a putty knife or similar tool. Repair of leaking tanks and plumbing, filling of holes and dents, and stopping leaks around doors are among its many uses. Material hardens without heat; will not shrink, crack, chip, or peel; may be covered with paints, lacquers, or enamels; and will take filing, drilling, and tapping. Made by **Devcon Corp.**, 1220 Endicott St., Danvers, Mass.

▲ For more details circle **NED-9 M9** on enclosed inquiry slip ▲

## GRATING PAINT PROCESS
### increases wear, corrosion resistance

Resistance to wear, abrasion, corrosion, chemicals, and weathering of steel grating is increased by the Ponbake paint process which employs a mixture of xylel,

epon resin, and color pigment. Grating is cleaned and phosphatized in one spray-wash operation, then high polymer synthetic paint is applied by flow coating method. Finally, grating is baked at 350° F to achieve bond. Coating withstands salt-laden atmospheres, test bombardment with heavy gravel, and has resisted concentrated sulfuric acid and caustic soda for several hours. Process developed by **Blaw-Knox Co.**, 300 Sixth Ave., Pittsburgh 22, Pa.

▲ For more details circle **NED-10 M9** on enclosed inquiry slip ▲

# HOLD and INDEX

parts with one fixture

## Makes small-part production profitable

**Zagar collet indexing fixtures are adaptable to many types of machinery. Index 2 to 25 positions *and* hold parts without any movement. 1" and 2" capacities. Zagar fixtures are low, do not hinder manual movements or obstruct measuring activity. Simple, substantial, and a great saving for small parts production.**

*Write For Data Sheet "N-12".*

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CLEVELAND 23, OHIO
TOOLS FOR INDUSTRY and SPECIAL MACHINERY

▲ For more details circle NED-11 M9 on enclosed inquiry slip ▲

with **KARLSON** *Automatic* **WATER/CONDITIONER**

This is the simplest and lowest cost method for eliminating the elements that clog and damage ice cubers and flakers, coffee makers and urns, cooling towers, evaporative condensers, etc.

KARLSONITE*, a water soluble complex phosphate in crystalline form, when automatically fed into the water supply, forms soluble complexes with calcium and magnesium, holds them in suspension and prevents precipitation of these elements. Deposits already formed are redissolved. Karlsonite* also forms inert complexes with iron, copper, nickel, manganese and zinc ions. It is harmless to all metals and prevents corrosion and pitting of metals in zeolite soft water. It is harmless to septic tanks—does not build up organic sludge.

Karlson Automatic Water Conditioner is easily installed, and requires no maintenance except infrequent renewal of the Karlsonite* charge.

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**STILES-KARLSONITE CORPORATION**
1564 Grand Avenue, Waukegan, Illinois
*Reg. U.S. Pat. Office
WATER CONDITIONING COMPOUNDS AND EQUIPMENT

▲ For more details circle NED-12 M9 on enclosed inquiry slip ▲



# CLOSURES

- **Metal or Plastic Caps or Plugs to protect threads, tubes, machined parts, reamers, cutters, tools.**
- **Protect against thread damage, dust, dirt, and moisture.**
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Clover closures are made in metal and tough plastic polyethylene. They are made in caps, plugs and special shapes to fit parts tightly, offering completely sealed protection during manufacture, shipping and storage. Backed by years of closure experience. Write for low prices and complete information.

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Name .....

Address .....

City .....

**CLOVER INDUSTRIES, INC.** 601 Young Street Tonawanda, N. Y.

▲ For more details circle NED-13 M9 on enclosed inquiry slip ▲


## Visit the Plant Maintenance Show

Solutions to many of your plant maintentenance problems will be offered at the 11th Plant Maintenance and Engineering Conference at Philadelphia's Convention Hall, January 25 to 28, 1960. Seventy-one experts from 52 companies in 20 basic industries will participate in the 43 discussion sessions.

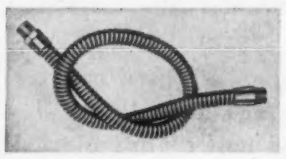
Held concurrently with the conference will be the the Plant Maintenance and Engineering Show. More than 400 companies will exhibit their equipment, materials, and processes which are designed to insure efficient plant operation and maintenance. Cost-saving guidance as well as engineering advice will be offered by these companies.

Knowing the interest of thousands of our readers in this field, we urge you to attend. NEW EQUIPMENT DIGEST will again have a booth at the show. You'll be welcome to drop in to chat with us about any problem, get a refreshing drink of water, or just sit and rest.

Anyone wishing hotel information or registration cards should write: Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

A. N. Gregg
EDITOR


## FLEXIBLE CONNECTOR holds tools, lights, special devices

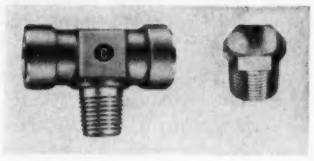


Combining flexibility and strength, this multipurpose connector can be used to hold lights, tools, magnifiers, safety shields, and other devices in hard-to-reach places. Ten sizes combining five different lengths in both heavy and light duty arms are available. Solid brass ferrule end fittings have 3/8-in. pipe threads on heavy arms; 1/8-in. pipe threads on lighter arms. Made by **Cannon Products, Inc.**, Elwood, Ind.

▲ For more details circle NED-14 M9 on enclosed inquiry slip ▲



## PIPE FITTINGS for corrosion resistant service



Corrosion resistant pipe fittings made from any machinable metal or plastic are available in standard or custom designs in 1/16 through 1-in. sizes. Precision-machined fittings are recommended for installations involving corrosion, pressure, and temperature problems. Made by **Cajon Machine Co.**, 902 E. 140th St., Cleveland 10, Ohio.

▲ For more details circle NED-15 M9 on enclosed inquiry slip ▲



# UNUSUAL BARGAINS

***Terrific Buy! American Made!***
**OPAQUE PROJECTOR**

Projects illustrations up to 3" x 3½" and enlarges them to 4 ft. wide. Ideal for sales meetings, designers, artists, schools, clubs, scout meetings, parties, "show-and-tell," etc. No film or negatives needed. Projects charts, diagrams, pictures, photos, lettering in full color or black-and-white. Operates on 115 volt, A.C. current. 6-ft extension cord and plug included. Operates on 60 watt bulb, not included. Approved by Underwriters' Laboratories, Inc. Size 12" x 8" x 4½" wide. Weight 1 lb. 2 oz. Plastic case with built-in-handle.

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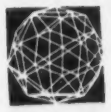
Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee



**D-STIX . . . New, Ingenious Construction Kits! Use As Visual Tool — Shape Electrical Ideas.** For engineers, designers, planners. D-STIX—colored wood sticks ⅛" thick and "easy-on" rubber joints—approx. 3/16" diam. help you shape ideas fast, work out configurations and perspectives, ascertain functionalism, construct models of equipment and structures. Used by professionals throughout industry. Money-back guarantee.

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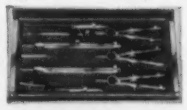
**CLOSE OUT! MECHANICAL DRAWING SET**



*Regular Price $18.00, Our Price Only $8.00 Ppd.* American manufacturer couldn't compete with foreign imports—thus you get a terrific bargain, even far below import prices. 10 handsome pieces in velvet-lined case. Nickel plated brass — precision American-made. We guarantee you'll be satisfied or money refunded.
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**EDMUND SCIENTIFIC CO., Barrington, N. J.**

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Complete technical data — fully illustrated . . . all you need to know about Metallic Power Rectifiers for *any* industrial power conversion application in your plant. Battery chargers; D.C. Power Supplies, Mag Amp Regulated; Massive Current Limiting Rectifiers used with D.C. Arc Furnaces; to complete Semiconductor Rectification Systems for the operation of electrolytic cells.

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# Browning NEW TAPERED ROLLER BEARING PILLOW BLOCK

- ★ unbreakable *malleable* housings
- ★ Timken tapered roller bearings
- ★ eccentric locking collar
- ★ labyrinth grease seals—retain lubricant, shut out dirt
- ★ elongated bolt holes for wide adjustment

Compare! Here is the only heavy duty roller bearing with eccentric locking collar to ensure firm shaft grip. It is designed with housing of *unbreakable malleable*, which provides extra strength, permits more compact design, lighter weight. And new tapered rollers specially designed by Timken for Browning, compensate automatically for normal misalignments. Now in distributor stock, 24 shaft sizes from 1 1/16" to 4". Elongated bolt holes provide wide adjustment and interchange. Ask distributor for complete details and bulletin BU-102A, or write **Browning Manufacturing Company, Maysville, Kentucky.**

Browning POWER TRANSMISSION EQUIPMENT

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# MOORE . . . your dependable source for DEPENDABLE SET SCREWS

- *standards or specials*
- *one or a million*
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- *priced right*

Something as small as a set screw shouldn't give you any trouble . . . and it won't, either, when you specify *Moore Set Screws*. Rigid quality control guarantees conformity and uniformity. *Your* production lines run smoothly and *your* quality control is simplified.

***Engineering Service*** — on new developments, or when you have a problem, let us provide the answers.

***Send for detailed price catalog.***

| | Headless Slotted | Square Head | Socket Head |
|---|---|---|---|
| Size (dia.) | #0 to 3/4" | #6 to 3/8" | #4 to 3/8" |
| Lengths | 1/16 to 3" | 3/16 to 2 1/2" | 1/8 to 1" |
| Points | cup, oval, round, flat, cone, dog | | |
| Materials | steel, brass, bronze, stainless, aluminum, alloy steel, monel | | |

Special Heads — milled, slabbed, double slot, knurled.
Miniature Headless—#0, #1, #2, #3 sizes in a wide selection of metals, finishes, lengths and points.

MOORE SET SCREWS

**George W. Moore, Inc.**
since 1880
94 Beaver St., Waltham 54, Mass.

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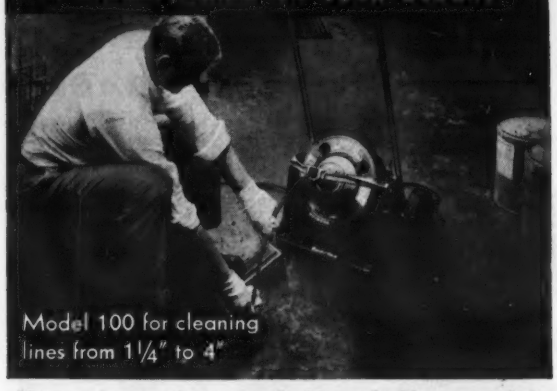
## ARE SEWER-CLEANING COSTS A STEADY DRAIN ON YOUR BUDGET?




*More and more plants now find it profitable to own their own SPARTAN Drain and Sewer Cleaning equipment.* Savings pay for the equipment quickly, and it's always immediately available — no delays. SPARTAN moves to the job in seconds, can do the job in minutes. Any employee can operate a SPARTAN efficiently and safely, without special skills or training. Write today for the complete SPARTAN catalog showing sizes to fit your plant requirements.

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AFFILIATES { CONCO BUILDING PRODUCTS, INC. - Brick, Tile, Stone; CONCO MATERIALS HANDLING DIVISION - Cranes, Hoists; FIELD CONTROL DIVISION - Barometric Draft Controls

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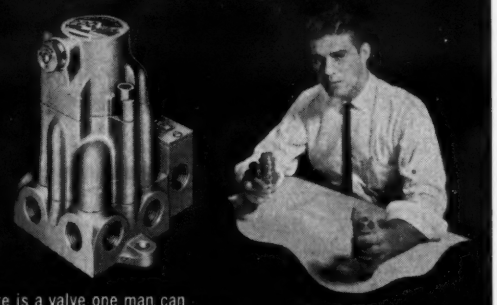
*After years...* if you do have to "repack"
## JUST REPLACE 2 SELF-CONTAINED UNITS
IF IT'S A HUNT PDQ AIR VALVE



Here is a valve one man can completely repack **in a minute on the line.** You just slide 2 self-contained units into place. One is the poppet-sleeve assembly. The other is the plug-in solenoid pilot assembly.

You stock only 2 spare units . . . not several dozen parts. Write us today.

A. V. Ney, Sales Manager

HUNT VALVE COMPANY · SALEM OHIO, U.S.A.

- ✓ Accessibility
- ✓ Simplicity
- Speed and Capacity
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The Hunt PDQ Valve tops them all in every class.

Next month . . . the SPEED and CAPACITY story.

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**Model VM215-3**
**INTERNAL & SURFACE BROACHING MACHINE**

- 2 Ton - 15" Stroke
- Fully Hydraulic
- Fast Set Up
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**$1565.00** COMPLETE WITH MOTORS & SWITCHES & COOLANT SYSTEM

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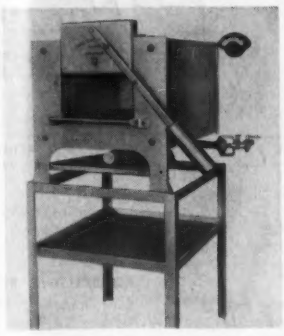
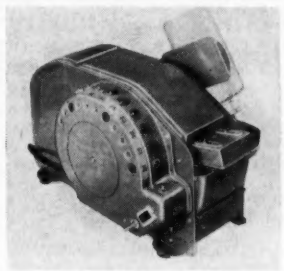
## BENCH TYPE OVEN FURNACE for heat treating to 2000° F



Cast iron venturi burner to speed up heating and a silicon carbide hearth which is resistant to shock and temperatures to 2000° F are among improved features of this No. 55 bench type oven furnace. Pilot simplifies lighting and assures safe operation. This quiet-operating unit is suited for heat treating and other industrial metalworking functions. Six sizes are available from **Charles A. Hones, Inc.**, 2473 Grand Ave., Baldwin, L. I., N. Y.

▲ For more details circle NED-23 M9 on enclosed inquiry slip ▲

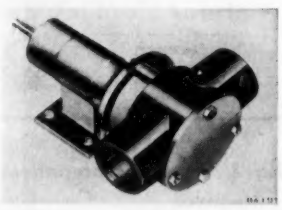
## GUMMED TAPE MACHINE delivers moistened tape lengths



Preset lengths of "thermo-moistened" gummed tape are delivered at the touch of a button by this Better Pack 555 electric gummed tape machine. Unit speeds sealing of cartons and is available with length-selector scales of 6 to 36 in. or 15 to 45 in., plus a release key for smaller or greater lengths, if required. Repeat length indicators are available for runs of same-size cartons. Built-in heater keeps water at proper temperature for quick, thorough glue activation. Machine is also available with a code printing attachment. Made by **Better Packages, Inc.**, 255 Canal St., Shelton, Conn.

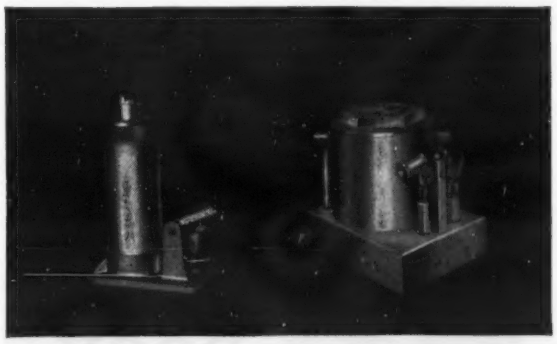
▲ For more details circle NED-24 M9 on enclosed inquiry slip ▲

## SANITARY TRANSFER PUMP handles chemicals and foods



General transfer applications involving chemicals, pharmaceuticals, and food are served by Model 7810 self-priming pump rated at 27.5 gpm against a 10-ft head. It is also suitable for use at up to 25 psi with dry vertical suction lift approaching 15 ft. The 9-lb pump consists of a phenolic plastic body, neoprene impeller, replaceable stainless wear plates, 316 stainless shaft supported by oversize sealed ball bearings, and a mechanical shaft seal. Inlet and outlet ports accommodate standard 1-in. pipe fittings. Made by **Jabsco Pump Co.**, 1485 Dale Way, Costa Mesa, Calif.

▲ For more details circle NED-25 M9 on enclosed inquiry slip ▲

## TWELVE EASY WAYS TO LIFT FROM 3 TO 100 TONS . . . USE DUFF-NORTON HYDRAULIC JACKS

Designed for ease of operation this rugged, dependable line of Duff-Norton hydraulic jacks gives you rapid rise with minimum effort. Twelve models in 10 different capacities ranging from 3 to 100 tons meet the lifting requirements of all types of industry.

Duff-Norton Hy-Power Hydraulic Jacks are stocked by your distributor. For quick delivery call him the next time you need a jack, or write for a copy of Bulletin AD-16-n to obtain complete details and specifications.

**DUFF-NORTON COMPANY**
P. O. BOX 1889, PITTSBURGH 30, PA.

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## Lewis Containers WILL save your money

**The LEWIS Stack-n-Nest®** is the container you can best afford to buy. No other unit will give you more for your dollar . . . through superior design . . . rugged construction . . . and versatile, efficient handling. Every container is handled thousands of times in its lifetime. Based on only 2000 handlings, if Stack-n-Nest Pans can save 10 seconds each time, it amounts to better than 5½ man hours. Translated into dollars and cents, the saving is greater than the initial cost of the average size pan.

*Write for complete information.*

G. B. Lewis COMPANY
412 MONTGOMERY STREET • WATERTOWN, WIS.

▲ For more details circle NED-27 M9 on enclosed inquiry slip ▲



today's most "able" HAND TYPE CLEANER by IDEAL

• VACUUMS • BLOWS • SPRAYS • DRIES*

HEAVY DUTY MODEL. Medium and Light Duty models also available.

**Capable** . . . Delivers efficient, economical, all-around service — whether you use it as a vacuum, blower, sprayer or drier*. Cast aluminum housing, streamlined and light in weight, makes possible long, continuous use without operator fatigue.

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**Adaptable** . . . Economically converts to Tank Type cleaner in less than a minute.

**TANK CONVERSION PACK**

Multiply the usefulness of IDEAL'S Heavy and Medium Duty Hand Type Cleaners by converting to a powerful, all-purpose STANDARD Cleaner. Conversion Pack consists of wheel-mounted 12-gallon steel tank and large dust-tight bag.

*Sold Through America's Leading Distributors*
*In Canada: Irving Smith, Ltd., Montreal*

IDEAL INDUSTRIES, Inc.
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Please send me full catalog data on IDEAL'S Hand Type Cleaners and Conversion Packs.

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Company_____
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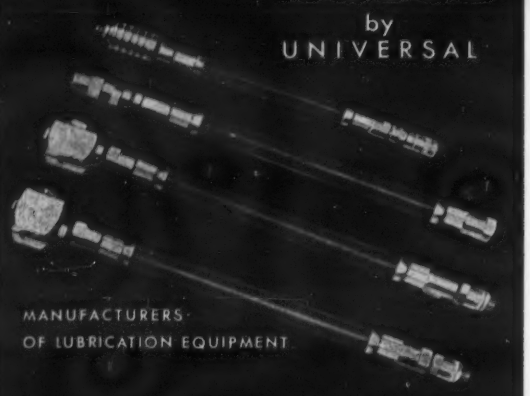
# High Pressure WIRE BRAID Grease Hoses by UNIVERSAL



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*For our new Automotive Catalog write . . .*

**UNIVERSAL LUBRICATING SYSTEMS, Inc.**
**Automotive Division • Oakmont, Pa.**

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*What's the best way to heat a pipe?*

*Your CHROMALOX Man has the Answer*

Your Chromalox Man can help you determine which of the above pipe heating methods is the one best electrical answer to your individual problem.

Maybe Chromalox Strip Heaters best meet your operating conditions. Quickly and easily installed at low initial cost, they provide uniform, accurate temperatures by either automatic or manual control. Lengths from 4" to 96" can be clamped in place side by side, or, half-round strip heaters may be bolted together to a minimum inside radius of 3½".

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Chromalox Thermwire Tape and Cable answer hundreds of other problems that can be solved by low temperature localized heat.

What's the best way for *you?* Just call your Chromalox Representative, listed below. He has the fast, clean, safe, accurate, economical ELECTRICAL ANSWER. He's backed by the world's largest stock of industrial electric heaters, ready for immediate shipment. And, he offers factory design engineering service for special applications.

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### Jig & Fixture Components

Standard Parts Co.—Catalog of "Everyday Standards" of jig and fixture components provides some 490 full-size template drawings which can help to compare and select the right size fixture or part for the desired purpose. Items illustrated are grouped under jig feet and legs, tool room screws and bolts, flange nuts and washers, hand knobs and levers, clamp strips and assemblies, miscellaneous fasteners, box jigs, mill fixture bases, chuck jaws, and T-angle plates.

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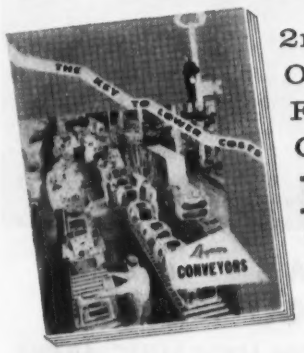

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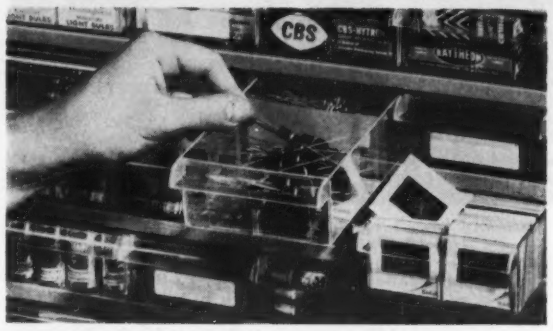

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You can put your finger on trouble in seconds with the Wassell **TWINS**

**Produc-Trol®** will give you delivery dates, parts supply, project status.

**Vu-Board** will tell you if the machines are loaded to meet those dates.

There's no digging in files or calling for reports . . . The facts are right in front of you to foresee problems in time to solve them.

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Parts shown 3/5 actual size

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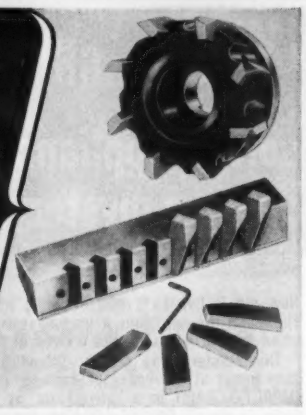

**MILL-EZE MILLING CUTTERS** (are designed to suit the widest range of milling operations . . . One size blade fits all diameters of Mill-Eze cutters. Cutting angles are incorporated into the design of the blades, eliminating the need to stock numerous cutter bodies for various machining operations.

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High quality MILL-EZE milling cutters are available in 3½" to 8½" diameters, using the same blades. Cutters take from 6 to 14 blades, depending on diameter, and blades of H S S, Electrite-Dynavan steel or carbide tipped can be either right or left hand. Blades fit tightly into slots, backed by accurate height adjustable stop; and are held securely without wedges or shoes. Blade sharpening fixture takes 6 to 14 blade sizes, and facilitate sharpening all blades at one time on any surface grinder. Inquire today . . . and see how MILL-EZE can help you.

Exclusive territories available to qualified representatives.

**PREFERRED INDUSTRIES, INC.** 8500 Lyndon Detroit, Mich.

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LINEMASTER Treadlite

REVOLUTIONARY NEW FOOT SWITCH

3½" x 2⅝" x 1"

Not much larger than a pack of cigarettes! Small, lightweight, efficient Treadlite gives you TWO accurate switching operations activated by ONE treadle. Light pressure requirements prevent fatigue. For your new product planning, specify Linemaster's Treadlite, the compact versatile foot switch housed in a smartly designed casing with slip-proof base, black crackle finish.

T-52-S—Two single pole, double throw switches; operated by one treadle: momentary contact only.
Also available: single pole, double throw switch. T-51-S.
*Cordsets available

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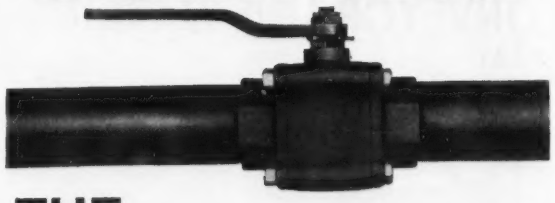

THE ECON-O-MISER BALL VALVE . . . with FLANGED GATE VALVES

The **ECON-O-MISER** ball valve provides smooth, round, two-way flow! Easy to service without removal from the line . . . half million cycles not unusual . . . acts as both valve and union.

For revealing facts request bulletin EB 101.

**WORCESTER**
VALVE CO., INC. / WORCESTER 10, MASS.

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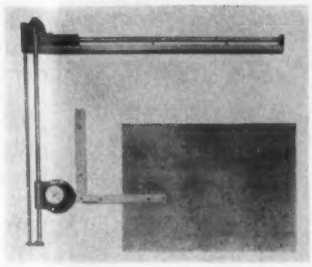
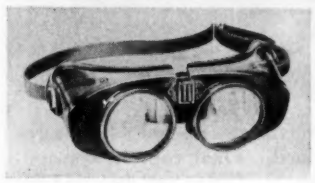
## DRAFTING MACHINE
### sizes for boards up to 48 x 120 in.



Full length horizontal and vertical parallel lines can be drawn with one motion on the Model 70 drafting machine. Having no overhang, the entire drawing surface can be used. The double vernier protractor gives angle settings to 5 min and is visible throughout 360 degrees. The board can be used at any angle from vertical to horizontal. Two simple brackets and four wood screws mount the unit on any board. With extra brackets, it is interchangeable for use on any board. Twenty-five models cover board sizes from 30 x 36 in. to 48 x 120 in. Prices, less scales, range from $143 to $206. Made by **Glideline Corp.**, 300 S. Potomac St., Waynesboro, Pa.

▲ For more details circle NED-39 M9 on enclosed inquiry slip ▲

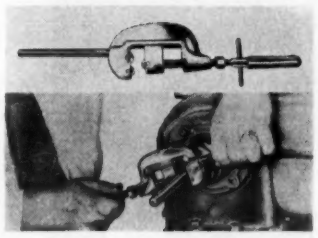
## WELDING & CHIPPING GOGGLES
### design fits most users



Standard 50-mm round lenses used in two types of goggles minimize replacement lens stocks. Goggles fit most users and also fit over all types of prescription spectacles. Chippers goggle No. 325 has perforated aluminum side shields for direct ventilation, adjustable leather bridge, rigid bar or adjustable rigid bridge, and clear lenses. Welder's Model 329 is identical except for indirectly ventilated side louvers and Filterweld No. 5 shade lens. Made by **American Optical Co.**, Dept. 4634, 1492 Mechanic St., Southbridge, Mass.

▲ For more details circle NED-40 M9 on enclosed inquiry slip ▲

## HAND KNURLING TOOL
### makes straight and diamond knurls



Savings in time on small production runs and individual parts are realized by using the Knurlmaster hand knurling tool. It makes 20 and 30-pitch knurls in straight or diamond patterns. Three interchangeable knurls have different patterns. Tool exerts uniform pressure on all sides of ⅛ to 1-in. diameter workpieces. Hardened steel frame clamps over the workpiece and automatically centers itself as the work rotates on lathe or drill press. Made by **Rockwin Mfg. Co.**, 80 Magnolia Ave., Westbury, L. I., N. Y.

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## Aftercooler and Cyclone Separator designed for cleaner, dryer compressed air

The Adams Aftercooler and Cyclone Separator are designed to efficiently condense and remove water from compressed air and process gas. Condensed moisture and entrained dirt and oil are subsequently removed in a cyclone type separator. This unit is scientifically designed for maximum removal efficiency over a wide range of flow rates.

For normal use, units are available to cool gases to within 10° F of the temperature of the cooling water. Specially designed units are available to permit a 2° F approach to cooling water temperature, for application where low moisture content is critical.

Adams Aftercoolers and Separators are available from stock to handle 20 - 40,000 cfm with 10° cooling and 25 - 19,200 cfm where it is necessary to cool within 2°F of the cooling water. Special units can be supplied to suit an unlimited range of requirements. In all cases the maximum pressure loss at rated capacities is ½ psi.

This wide range of sizes enables the economical utilization of Adams Aftercoolers and Separators in virtually all industrial application. For further information on how R. P. Adams' units will solve your compressed air problems and save you money, write today for Bulletin 711. R. P. Adams Co., Inc., 227 East Park Drive, Buffalo 17, New York. *Advt.*

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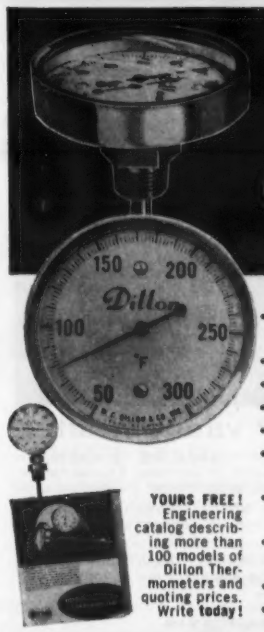
Precision HEAT MEASUREMENT by Dillon



- 12 Fah & Cen ranges for gases or liquids
- 1", 1 11/16", 2 5/16", 3", 5" head sizes
- Stem lengths from 2½" to 72"
- Straight form or angle form
- Choice of mounting nuts
- Pressure & moisture proof. Overheat protected.
- Corrosion resistant (bezels & stems made of 316 ss)
- Exclusive bi-metal coil, individual calibration insure utmost accuracy
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- Special models & ranges to order

**YOURS FREE!** Engineering catalog describing more than 100 models of Dillon Thermometers and quoting prices. Write **today!**

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LIQUID LEVEL

Indicators
Recorders
Controllers

The completeness of the Foxboro Line is your assurance of *unbiased* recommendations on instruments to indicate, record, or control liquid level. Whatever type of system you require (bubble tube, differential pressure, float, diaphragm box) . . . whatever your problem (such as turbulent, viscous, or corrosive liquids, whether in open or pressured vessels)—Foxboro offers the most efficient instruments for the job. Why not consult Foxboro first—and be sure! Write for Bulletin 8-10. **The Foxboro Company, 6612 Neponset Avenue, Foxboro, Mass., U. S. A.**

FOXBORO Instruments
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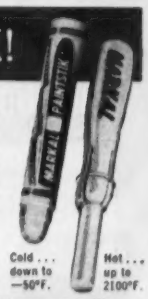


We will send you without cost or obligation a MARKAL PAINTSTIK. They are available in various types suitable for marking on any kind of material. Hot surfaces up to 2100°F, also welding and heat treating. Cold surfaces down to —50°F, wet, dry, icy, oily, rough, smooth, acid or alkali. *MARKS Are Permanent, Fadeproof, Weatherproof.* Specify surface condition, material, temperature at time of marking.

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USE THIS COUPON OR WRITE ON YOUR LETTERHEAD!

Here's what I want to mark: _____

Marking Temperature _____ Max. Temp. _____ °F.
Name _____
Company _____
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City _____ Zone _____ State _____
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**MARKAL COMPANY**
3053 West Carroll Avenue • Chicago 12, Illinois

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## PRESSUREGRIP vacuum lifter

Versatile Whiting Pressuregrip vacuum systems pick up even rough textures, like diamond tread plate, plywood, or concrete. Special narrow grippers are available to lift rails, beams, or even pipe.

UNDER-THE-HOOK PRESSUREGRIP UNITS (shown above) speed overhead crane operation—eliminate time-consuming chain rigging—cut materials handling costs.

CUSTOM PRESSUREGRIP VACUUM FEEDING EQUIPMENT can be designed to your requirements. Whiting engineers are at your service to automate many repetitive operations.

WRITE TODAY FOR NEW BULLETIN V-100
"Whiting Pressuregrip"

*Whiting Corporation, 15660 Lathrop Avenue, Harvey, Illinois*

**WHITING**

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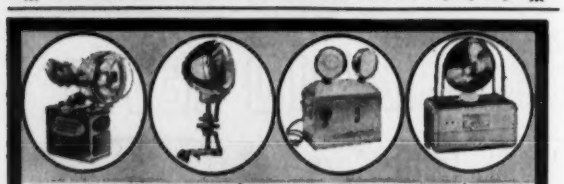

For Every Need . . . Every Budget!

**MAKE YOUR OWN CHOICE!**

There are complete lines of Carpenter Emergency Lights for all basic needs . . . the widest choice of powerful, dependable, durable lights available.

**WARNING LIGHTS:** Vehicle and stationary types . . . colored, flashing, oscillating, revolving!
**HANDLIGHTS:** Powerful "Portalites" with the famous extra-wide coverage! Rechargeable or dry battery types.
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Your Guide to over 100 Emergency Lights . . . the Carpenter Catalog. Write for copy.

**CARPENTER MFG. COMPANY**
636 Bradley Street, Somerville 45, Mass. Telephone MOnument 6-4300

▲ For more details circle NED-47 M9 on enclosed inquiry slip ▲



*NEW* "jet syphon" air operated vacuum cleaner

*Ideal for...*
★ HEAVY DUTY CLEANING
★ EXPLOSIVE CONDITIONS

*Money-saving features . . . Multiple uses . . .*

★ Safer in wet, dusty, charged or explosive areas . . . no electric motors, wiring or connections.
★ Develops real 'work-horse' suction . . . minimum consumption from any compressed air source . . . no need for matching electric power outlets. Quieter too.
★ Wet or dry pick up . . . material handling . . . cleaning machinery, motors, parts, bins, switchboards, walls, pipes, flues, floors, etc.
★ Transported, handled and maneuvered with ease . . . weighs only 29 pounds.
★ No moving parts or motors to wear or burn out . . . operates for years with little maintenance.
★ Safer pick-up of combustible liquids, powders, grains, magnesium dust, glass, etc.
★ Now . . . a complete line of job-designed accessories and attachments.

**LAUKHUFF-PRATT MFG. CORP.**
3095 WEST MILL ROAD • MILWAUKEE 9, WISCONSIN

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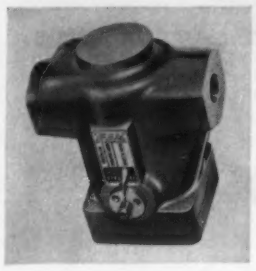
## DIRT-INDICATING FILTER
### for high pressure fluid service



Tell-Tale in-line fluid filter clearly signals when filter element needs changing. It is suited for pressures to 2000 psi and can be furnished with any of seven filter media having openings from 238 to 10 microns. A typical flow rating with a 149-micron element at 1-psi pressure drop is 20 gpm. Features include easy access, full-flow filtering, adjustable maximum pressure drop control, and full bypass. It will also check flow rates. Made by **Rosaen Co.**, 1776 E. Nine Mile Rd., Hazel Park, Mich.

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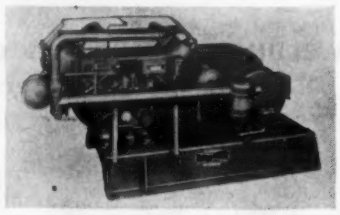
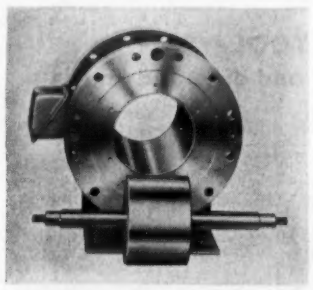
## AIR COMPRESSORS
### 10 to 30-hp water cooled units



Efficient operation in severe industrial service where high ambient temperatures may exist is assured by design of WJ and WK water-cooled air compressors offered in a 10 through 30-hp range. Maximum discharge pressures of 125 psi are recommended. Dual control, continuous or start-stop, is optional. Units are designed for industrial, bulk plant, or refinery use, as well as for fleet truck service, where air demand is large. Made by **Dunham-Bush, Inc.**, Brunner Div., 179 South St., West Hartford 10, Conn.

▲ For more details circle NED-50 M9 on enclosed inquiry slip ▲

## CANNED PUMP MOTOR
### handles corrosives, volatile liquids



Sizes from ½ to 5 hp are available in this stainless steel canned pump motor for handling nuclear contaminated, corrosive, or volatile liquids. Dimensions are those of NEMA specifications for the next higher horsepower at the same motor speed. Stainless steel, carbon block, glass, Teflon, sintered bronze, Teflon-impregnated bronze, and other materials are available for bearing use for various services. Stators are completely sealed. Motors are supplied separately or with attached pump which can be submerged or not. Made by **H. K. Porter Co.**, Peerless Electric Div., Market Street, Warren, Ohio.

▲ For more details circle NED-51 M9 on enclosed inquiry slip ▲


WHEREVER DANGER HIGH VOLTAGE WARNING SIGNS

EMERGENCY GAS SHUT OFF AND FLAGS

ARE REQUIRED

...IPCO FIRE EXIT POINTS THE WAY

A complete line of flags, cones, plastic barrier rope and highway warning devices—including exclusive new IPCO Ray-D-8* warning flags in fluorescent red for extra visibility day or night—assure maximum job protection for your safety equipment dollar. Write today for detailed specifications and price data . . . or discuss your safety needs with a qualified IPCO Safety Engineer.

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IPCO SAFETY PRODUCTS
INDUSTRIAL PRODUCTS COMPANY • 2807 N. Fourth Street • Phila. 33, Penna.

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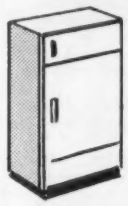
# IMPACT-O-GRAPH solves appliance damage mystery!

**How did it happen? Where did it happen? Who is to blame?** Those are the questions a leading refrigerator manufacturer asked when the porcelain enamel arrived in damaged condition.

This mystery was quickly solved by IMPACT-O-GRAPH. Rather than guess at the cause of damage, this manufacturer placed an IMPACT-O-GRAPH in a refrigerator as it left the assembly line.



IMPACT-O-GRAPH proved that the damage was caused on the shipping dock — when the crate was tipped on its side for address labeling.

Result? The stenciling method was changed and damage substantially reduced.

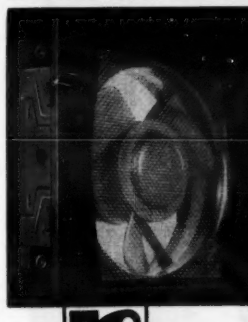
For measuring acceleration, deceleration, or shock, IMPACT-O-GRAPH eliminates guess-work, gives the correct answers quickly.

A choice of models for different requirements in many "G" intensities. Write for a brochure telling the whole story. Leasing arrangements available. IMPACT-O-GRAPH is National Safe Transit approved.

The IMPACT-O-GRAPH Corp.
1900 EUCLID AVE. CLEVELAND 15, OHIO

▲ For more details circle NED-53 M9 on enclosed inquiry slip ▲

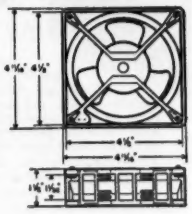




*most COMPACT*
*most ECONOMICAL*
*most EFFICIENT*
*cooling fan*
*of its size.*

ROTRON® **muffin® fan**

The MUFFIN FAN is a completely integrated cooling unit that boasts a high air performance of 100 CFM from a unit measuring only 4 11/16" square and just 1½" deep. Will fit any panel thickness from ½" up. Extremely quiet operation. 115 VAC, 60 CPS, single phase. Less than $8 in quantity!



Write for descriptive literature...

**ROTRON mfg. co., inc.**
WOODSTOCK, NEW YORK
®In Canada: The Hoover Co., Ltd., Hamilton, Ont.

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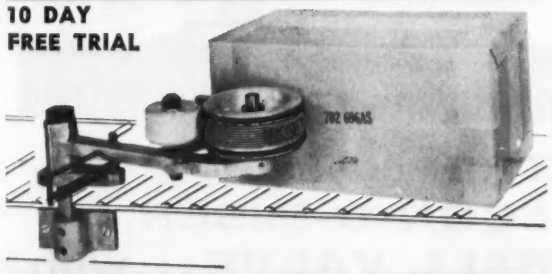
# NEW *LEADER* IN CONVEYOR LINE MARKING

10 DAY FREE TRIAL



THE PRYOR **ROCKET**

- Trouble free, non-stop "friction" operation—self inking
- Interchangeable rubber type. Easy-to-read impressions. Quick copy changes
- Surprising low cost—saves expensive hand marking or large inventories of pre-printed cartons
- New simplified design—easier disassembly and inking. Rocket 1 prints up to 1 inch height. Rocket 2 prints up to 2 in. height
- Durable aluminum construction

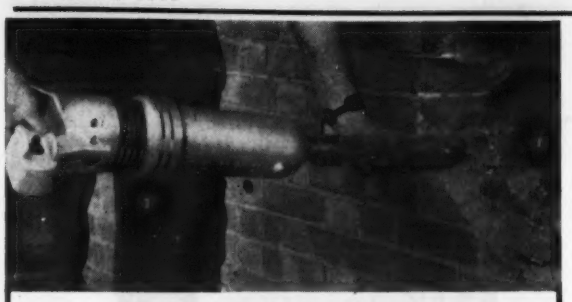
Write for FREE trial—specify model

IMPRINTS CODING DATES, DATA ON:
- CARTONS
- BAGS
- ROLLS
- CANS
- DRUMS

etc., etc.

**PRYOR MARKING PRODUCTS**
434 S. Wabash Ave., Chicago 4, Ill.

▲ For more details circle NED-55 M9 on enclosed inquiry slip ▲



NO OTHER TOOL
CAN MATCH PORTER-CABLE
**KANGO**
ELECTRIC HAMMERS

- Built to take pounding vibration
- No blow while idling
- Trouble-free operation
- Uninterrupted service
- Precision performance
- Low maintenance costs

Used for drilling, cutting, forming, chipping, channeling, gouging, caulking, demolishing, tuck-pointing, vibrating, descaling—the KANGO is rugged enough to handle the toughest jobs.

AVAILABLE IN 3 MODELS
TYPE G: 3/16" to 3/4"; 1800 blows per minute
TYPE F: 3/16" to 1½"; 1600 blows per minute
TYPE E: 1" to 3"; 1300 blows per minute

Porter-Cable Quality Power Tools

PORTER-CABLE MACHINE COMPANY
912B Marcellus Street
Syracuse 4, N. Y.

For more details circle NED-56 M9 on enclosed inquiry slip

CIRCUIT-MASTER
**missing parts detector**
detects non-ejection mis-feed • buckling end-of-material

Priced as low as $271.75 complete!

Protect all your dies from damaging overloads for less than the replacement cost of one. Circuit-Master's patented electronic circuits automatically stop your machines BEFORE an unejected part can cause a die-damaging overload.
Simple to install, no changes to equipment or wiring required—Circuit-Master is completely automatic, no adjustments of any kind.
Write, wire, phone now for detailed bulletin NED-1259.
U. S. and foreign patents pending

WINTRISS, INC.
Originators and manufacturers of Circuit-Master Overload Detector, Autotransfer, Automat, Automold and Missing Parts Detector.
20 Vandam Street • New York 13 • CHelsea 2-0105
Representatives: A few territories open on an exclusive, protected basis.

For more details circle NED-57 M9 on enclosed inquiry slip

**Convert to FLUID DRIVE in only 5 MINUTES!**

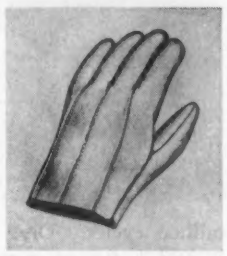
Complete and ready to install in minutes . . . slips right over the motor shaft . . . that's the Twin Disc Hydro-Sheave® Drive. Hydro-Sheave Drives reduce starting current demands . . . permit selection of smallest motors . . . provide smooth, fast acceleration . . . protect against overloads, stalling and burn-outs . . . cushion out destructive shocks and vibrations. Twin Disc Hydro-Sheave Drives from ¾ to 50 hp at all nominal motor speeds . . . Fluid Couplings to 850 hp.

TWIN DISC
Friction Clutches and Fluid Drives

TWIN DISC CLUTCH CO. • Racine, Wisconsin

For more details circle NED-58 M9 on enclosed inquiry slip


## VINYL WORK GLOVE
### abrasion and snag resistant



Easily laundered Four-To-One vinyl impregnated work glove is soft and flexible for hand comfort and positive gripping action. The long-wearing glove is abrasion and snag resistant and is offered in slip-on and gauntlet styles. Both men's and women's medium and large sizes are available. Made by **Surety Rubber Co.**, 226 Hall Ave., Carrollton, Ohio.

For more details circle NED-59 M9 on enclosed inquiry slip

## COIL CRADLES
### take 10, 15, 20, 24-in. widths

Guiding system incorporated in 2000 J Series of easy loading coil cradles permits rapid, accurate feeding without crimping or binding. Four models have capacities from 1 in. to maximum widths of 10, 15, 20, and 24 in. They will handle up to 2000-lb coils. Cradles are powered by a ½ hp motor with magnetic starter and include a 1-sec time delay relay and reversing switch. Standard feed rate is 90 fpm, with other rates to order. Made by **Rowe Machinery & Mfg. Co.**, 811 Regal Row, Brookhollow, Dallas, Tex.

For more details circle NED-60 M9 on enclosed inquiry slip

## SAFE PLUNGER CAN
### dispenses volatile liquids

Cleaning operations that must be done with gasoline and other flammable and volatile liquids can be performed with safety when dispensed by this safety plunger can. Pressing down on a spring-mounted dasher forces a measured amount of the fluid to rise and dampen a swab, brush, sponge, or cloth. A perforated metal screen in the dasher acts as a fire baffle. The Factory Mutual approved can has a one-piece 24-gage terne coated steel body. It is offered in 1 and 2-qt and 1-gal sizes. Made by **Eagle Mfg. Co.**, 1058 Charles St., Wellsburg, W. Va.

For more details circle NED-61 M9 on enclosed inquiry slip


Sutton NEW IMPROVED MOTOR DRIVEN PRESSURE BLOWER

ONE-PIECE HOUSING
SELF-CLEANING WHEEL

for
EXHAUSTING
Dust . . Smoke
Fumes . . Vapor
COOLING
DRYING
CONVEYING
Cotton . . Wool
Shavings
FORGE BLASTING

3 SIZES
¼, ½, 1 H. P.

STRONG . . LIGHT
CAST ALUMINUM

Even, non-pulsating air flow . . 100-800 cu. ft. per min. at ½" to 6" static pressure. Straight wall construction cuts windage . . ups efficiency. 3450 r.p.m. direct connected 60-cycle motor . . open or totally enclosed. Set discharge in 8 different positions.

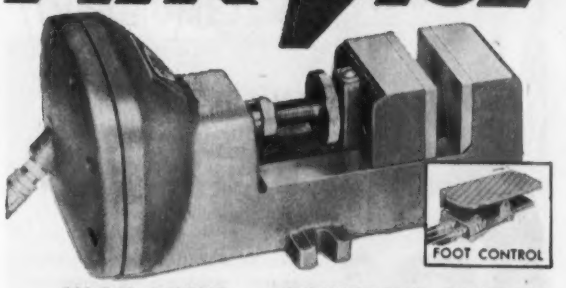
WRITE FOR DESCRIPTIVE LITERATURE

Sutton Manufacturing Corp.
112 W. WILSON AVENUE
NORFOLK, VIRGINIA

For more details circle NED-62 M9 on enclosed inquiry slip



Speedy AIR VISE




HIGH SPEED • POWERFUL GRIP

New, improved model speeds up all repeat operations—*milling, drilling, tapping, punching, bending, riveting.* Both hands left free to produce more! Light squeeze to 2250 pounds pressure! Extra thick jaws for attaching jigs. Jaws open to 3-inches; 1/16" to 5/8" maximum travel. Complete with foot control, air hose and fittings..... $44.00

SPEEDY AIR REGULATOR
Regulates pressures 0 to 140 lbs.
No. 622 $7.25

SPEEDY AIR FILTER
Assures clean, oil-free air.
No. 140 $4.00

SPEEDY UNIT
Production spray unit with Ext. Mix Gun.
No. 705 $26.50

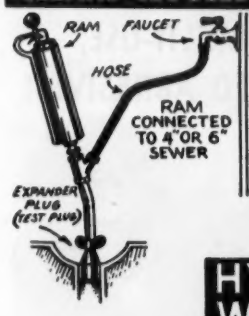
*Order from Your Supplier or Write for Air Tool Catalog*
W. R. BROWN CORP., 2647 N. Normandy Ave., Chicago 35

AIR TOOLS • AIR VISES • AIR REGULATORS • FILTERS • COMPRESSORS

For more details circle NED-63 M9 on enclosed inquiry slip



CLEARS CLOGGED DRAINS in Seconds!




The ideal plumbing service tool. Can pay for itself in one application!

Smashes through the most stubborn blockages, then flushes clean — all in one operation!

Comes equipped with self-contained manual compressor (can charge Ram to 100 lbs. in 30 seconds!) and drain adaptors in 6 sizes!

HYDRAULIC WATER RAM

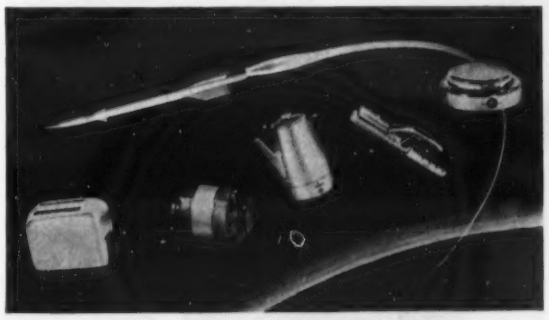
Anyone can operate it! Thousands already in use, have saved *millions* of dollars in industry and institutions. Why lose time, suffer inconvenience, waste dollars needlessly on either completely blocked or slow-moving sewers, drains, fixtures? The HYDRAULIC WATER RAM clears severest stoppages with SPLIT-SECOND HYDROSTATIC IMPACT! . . . Shatters blockage, then flushes clean. No snakes, chemicals, cables. No pushing through. Works perfectly, *vent or no vent!* Nothing to wear out. You risk nothing on our 30 day free trial offer, at our expense. Write for details.

Works perfectly with all clogged fixtures, toilets, sinks, urinals, etc. Equipped with 4" rubber cone, ideal for toilets, plus set of 5 tapered adapter plugs for other drains or sewers.

*Write for Information, Prices, Free Trial Offer — Today!*
HYDRAULIC MANUFACTURING CO.
214 INDUSTRIAL HEIGHTS KIEL, WISCONSIN

For more details circle NED-64 M9 on enclosed inquiry slip





**How plastic laminates behave at high temperatures**

A discussion of the thermal endurance of plastic laminates at very high temperatures and at moderately elevated temperatures. Request Synthane Bulletin 59-4.

SYNTHANE

SYNTHANE CORPORATION
N.E. River Rd., Oaks, Pa.
Please send me Bulletin 59-4 containing information about the suitability of Synthane laminates for heat resistance.

Name _____
Address _____
City _____ Zone _____ State _____

For more details circle NED-65 M9 on enclosed inquiry slip

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DUPOR No. 46 RESPIRATOR

Big 46 sq. inch filter guards against pneumoconiosis-producing, toxic, poisonous and nuisance dusts. Can be worn with goggles or glasses. Adopted as standard by countless industries the world over. Complete protection for nose, throat, lungs. See your safety equipment supplier or order sample direct—$3.25 postpaid.

*Approved by U. S. Bureau of Mines*

**H. S. COVER**

Dept. 1205, South Bend 14, Indiana

*"Respirators for Industry Since 1894"*

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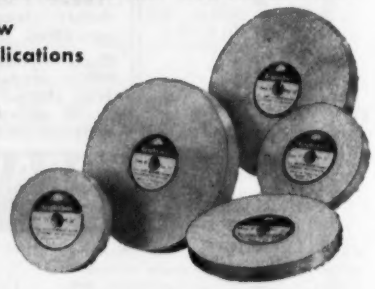
**The Only Complete, Comprehensive STOCK LINE of MULTI-USE, SOFT RUBBER BONDED ABRASIVES!**

Broad, New Time-Saving Applications Never Before Associated with Abrasive Uses



*Brightboy's unique rubber-and-abrasive working action offers* exceptional time-saving, product-improving opportunities. Replaces older, costlier methods. BURRS, CLEANS, FINISHES, POLISHES, *frequently in one operation.* Wheels, Sticks, Rods and Blocks in grades and textures JOB-MATCHED to your machine and manual operations.

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- Illuminating Details
- Work & Applications Data
- Free Sample Hand Piece

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BRIGHTBOY INDUSTRIAL DIVISION
WELDON ROBERTS RUBBER CO.
95 North 13th Street
Newark 7, N. J.

*America's Pioneer Manufacturer of Rubber-Bonded Abrasives.*

▲ For more details circle NED-67 M9 on enclosed inquiry slip ▲



**POINT-OF-USE STORAGE**

Reduces Parts Loss and Damage

SAVES SPACE and TIME

**IN ASSEMBLY PLANTS AND JOB SHOPS** low cost Stackbins in Stackracks provide flexible point-of-usage storage to cut costs and increase production.

**AVAILABLE IN 8 SIZES,** individual Stackbins in Stackracks make components of high usage accessible. Different size units can be interstacked to provide centralized control of related parts. STACKBIN POINT-OF-USAGE STORAGE is easily adapted to changing production requirements. Individual Stackbin in Stackrack units interlock: no tools, fasteners or set-up time required.

ALL STACKBIN PRODUCTS ARE SOLD DIRECT

WRITE FOR CATALOG 585A

**STACKBIN CORP. 1081 Main St., Pawtucket, R. I.**

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Perth

STACKBIN® SYSTEM "Stacked and Still Accessible"

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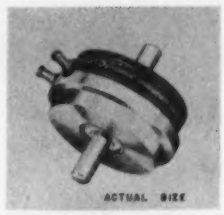
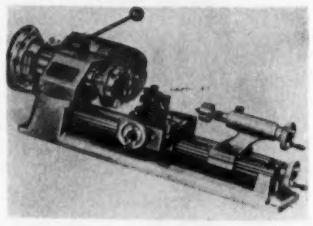
## ELECTROMAGNETIC BRAKE
### miniature unit has 0.405-in. length




Various miniaturized controls can be served by this Frame Size 8 miniature electromagnetic brake, a wafer type unit with output torque of 16 oz-in. The 0.405-in. long brake has no moving electrical parts which are subject to wear and has a tested life expectancy of over 1 million cycles. Drag torque is 0.05 oz-in. minimum, weight is 0.7 oz, power consumption is 2 w at 24 v dc, and its operating range is −55 to 125° C. Bearings are Class 7 shielded. Made by **Dynamic Instrument Corp.**, 59 New York Ave., Westbury, L. I., N. Y.

▲ For more details circle NED-69 M9 on enclosed inquiry slip ▲

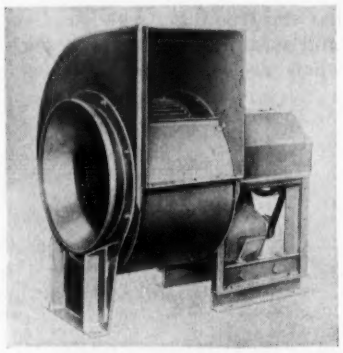
## MINIATURE LATHE
### machines to 0.004-in. tolerance



About the size of a typewriter, this Unimat miniature lathe will tool small parts for mock-ups and scale model equipment. It can be set up as a lathe, drill, press, milling machine, tool grinder, polisher, and hand drill, and is equipped with motor, lathe, drill chuck, and other lathe accessories. Attachments include a jigsaw, table saw, threading unit, and indexing and dividing attachment. Made by **American Edelstaal, Inc.**, Unimat Div., 350 Broadway, New York, N. Y.

▲ For more details circle NED-70 M9 on enclosed inquiry slip ▲

## PACKAGED FANS
### have integrated motor and drive



Volumes up to 25,000 cfm, static pressures to 2½ in., and design for 300° F use are available in line of Ready Unit V-belt driven fan sets. They are suited for supply or exhaust, indoor or outdoor applications, and are furnished with motor and drive integrated in one assembly. Type LS units have low speed, forward-curved multiblade wheels in 13 sizes; Type MS units have medium speed, backward-inclined blade wheels in 12 sizes. Discharge direction is easily changed in the field, and motor, drive, and bearings are accessible for easy adjustment. Made by **Clarage Fan Co.**, 619 Porter St., Kalamazoo, Mich.

▲ For more details circle NED-71 M9 on enclosed inquiry slip ▲


**HOW TO CUT COSTS with CABLE CONVEYORS**

*new bulletin 40A tells how . . .*

*GET YOUR COPY TODAY!*

Learn how you can save valuable floor space...cut maintenance costs . . . by using BUSH-LOCK Overhead Trolley Cable Conveyor Stock Components arranged to your exact requirements. Write for the new Bulletin 40A today!

*Every Way Better* C-353-EWB
THE E. W. BUSCHMAN CO.
4482 Clifton Avenue Cincinnati 32, Ohio

E W B CONVEYORS FOR EVERY INDUSTRY

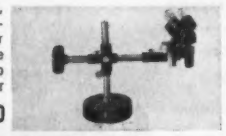
▲ For more details circle NED-72 M9 on enclosed inquiry slip ▲



**NEW UNITRON stereo microscopes .....as low as $110**

*Both models offer . . . sharp clear erect image • large depth of focus • wide field • long working distance • interpupillary and diopter adjustments • rack and pinion focusing • coated optics*

**MSL** — a precision, budget priced instrument. Vertical binocular body. Choice of single magnification from 5X to 45X. Extra eyepieces for additional powers, $19.50 per pair. **$110**



**MSHL** — a versatile general purpose instrument with a wide range of magnifications. Inclined binocular body, revolving nosepiece for rapid interchange of objectives. Model MSHL-1 with objectives: 1X, 2X, 3X; eyepieces: 8X, 12X, 15X; magnification range: 8X-45X. Other magnification ranges available. **$267**

**AVAILABLE FOR FREE 10-DAY TRIAL . . . WRITE FOR FREE CATALOG 52X**

**ACCESSORY STAND** — For use with binocular head and focusing mechanism of either Model MSL or MSHL. Price (stand only), $75.

UNITRON INSTRUMENT DIVISION OF UNITED SCIENTIFIC CO. 204-206 MILK STREET • BOSTON 9, MASSACHUSETTS

▲ For more details circle NED-73 M9 on enclosed inquiry slip ▲



**Mix Liquids Safely**

with Air-Driven Drum Agitator

Flammable and volatile liquid mixtures can be agitated safely with the new Prenco Air-Driven Drum Agitator. Designed to operate off compressed air systems in plants, it fits into standard 55-gallon drums without need for drum alteration. Speedy agitation to even consistency is assured through scientific paddle design.

Lightweight and completely portable, the Prenco Air-Driven Drum Agitator is available in Model C for light mixtures and Model D for heavy, viscous materials. Write for full details.

PRENCO LIQUID AGITATORS

Prenco Products, Inc., 2605 W. 14 Mile Rd., Royal Oak, Mich.

▲ For more details circle NED-74 M9 on enclosed inquiry slip ▲



NEW SMALL, LIGHTWEIGHT PRESSURE CONTROL

AP-153 WEIGHT: 1¾ lbs.

FOR MEDIUMS NOT INJURIOUS TO STEEL OR SILVER SOLDER

EXTERNAL ADJUSTMENT

CALIBRATED DIAL

HERMETICALLY SEALED MERCURY SWITCH

VISIBLE CIRCUIT

CASE: NEMA 1—Heavy gauge steel, cadmium plated. Steel cover (with glass front).

WRITE FOR BULLETIN 02

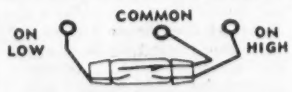
THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILL.

**OPERATING RANGE**

| Adjustable Operating Range | Differential Fixed (Factory Set) | Maximum Surge Limits |
|---|---|---|
| 1 to 20 psig | 0.5 psig. | 30 psig. |

**CIRCUIT**

SP-DT HERMETICALLY SEALED MERCURY SWITCH (4A. 115V., 2A. 230V.)




Provides any of following operations:

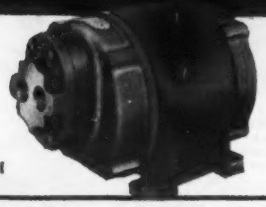
1. *Single Pole—Cut-in high (close on rise)*
2. *Single Pole—Cut-in low (open on rise)*
3. *Single Pole—Double Throw*

▲ For more details circle NED-75 M9 on enclosed inquiry slip ▲

## New Additions to ROPER T SERIES

CHOICE OF 192 MODELS

.3 to 55 GPM - to 400 PSI



**COMPACT, INTEGRAL PUMP and MOTOR UNITS**
**For Hydraulic, Pressure Feed, Transfer Work**

Compact, lightweight, "all-in-one" units with pump serving as end bell of motor. No coupling required — saves space. Furnished with open drip proof or totally enclosed standard NEMA motors, single or three phase. Send for Bulletin 31 today!

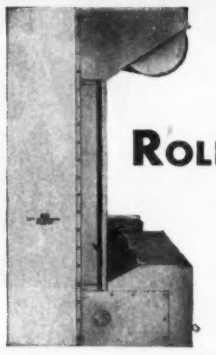
- COMPLETE, COMPACT UNITS
- LOW FIRST COST
- MOUNT IN ANY POSITION
- LONG LIFE SERVICE

ROPER HYDRAULICS, INC.
Dept. 672, P. O. Box 269
Commerce, Georgia

ROPER ROTARY PUMPS

▲ For more details circle NED-76 M9 on enclosed inquiry slip ▲

## NEW AAF ROLLOTRON



**Cleans air electronically, rolls away the dirt!**

Here is the only air filtration unit in the world that offers you

- the efficiency of an electrostatic precipitator, and
- the minimum maintenance of an automatic-renewing, disposable media air filter, both in one space-saving unit!

**MINIMUM MAINTENANCE.** Replace soiled media about once a year—like changing film in a camera! That's all; no oiling, washing, water, freezing, or drains.

**SMALLER SIZE.** Rollotron requires no more space than any other electrostatic precipitator. Write for Bulletin 249.

AAF American Air Filter COMPANY, INC.
391 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

▲ For more details circle NED-77 M9 on enclosed inquiry slip ▲

## Master Gearmotors

**matched motor and right angle reducer in one compact power package**

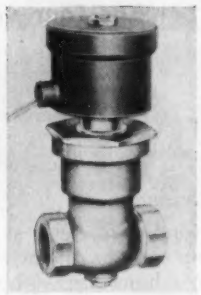
Reduce engineering and assembly costs—eliminate separate components with this Master Gearmotor. No high speed couplings, V-belts, chains and sprockets required. Takes up less space—reduces mounting plates and maintenance. Available in ratings from ⅛ to 125 hp. in right angle, parallel or in combination. Wide choice of electrical and mechanical modifications . . . vertical, horizontal flange, and face mountings; output shaft over, under, left or right.

Write for full information, or call your nearest Reliance Sales Engineer. E-1647

RELIANCE ELECTRIC AND ENGINEERING CO.
Dept. 2412A1 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

▲ For more details circle NED-78 M9 on enclosed inquiry slip ▲

## SOLENOID VALVE
**0 to 3000 psi type**



Bronze and stainless steel bodies are offered in the 30,000 Series full-ported, direct - lift solenoid valve. Port sizes range from ¼ to 3 in. and pressures from 0 to 3000 psi. The Uramic solenoid is unaffected by line pressure variations. Made by **Atkomatic Valve Co.**, 545 W. Abbott St., Indianapolis 25, Ind.

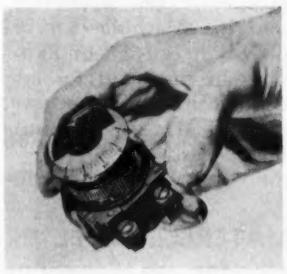
▲ For more details circle NED-79 M9 on enclosed inquiry slip ▲

## FOOT SWITCH
**cordsets available to order**

Over five different standard switch ratings and arrangements are offered in the Model Y 15A foot switch. The 4¾ x 2¾ x ⅞-in. control has a black wrinkle finished, cast iron housing and weighs 1 lb. Cord sets and special paint are available to specifications. Price range is $7.85 to $8.15. Made by **Vemaline Products Co.**, Box 222, Hawthorne, N. J.

▲ For more details circle NED-80 M9 on enclosed inquiry slip ▲

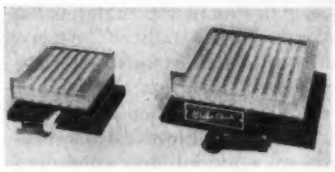
## POTENTIOMETERS
**for base or one-hole mounting**



Ready-to-mount oiltight potentiometers are offered in three models: A single element, 2-w unit; dual element, 2-w unit; and a single element, 25-w unit. All can be base or one-hole mounted. Operating knob, indicator ring, and subpanel operator are independently adjustable for accurate alignment. Made by **Cutler-Hammer Inc.**, 574 N. 12th St., Milwaukee 1, Wis.

▲ For more details circle NED-81 M9 on enclosed inquiry slip ▲

## PERMANENT MAGNETIC CHUCKS
**offered in three sizes**



Ceramic permanent magnets are incorporated in this line of steel-face magnetic chucks. Light in weight and low in height, they have fine pole divisions and are suited for toolroom set-ups. Three sizes are offered: 4 x 4 in., 4 x 8 in., and 6 x 6 in. Made by **O. S. Walker Co.**, Rockdale Street, Worcester 6, Mass.

▲ For more details circle NED-82 M9 on enclosed inquiry slip ▲

## Duty Master

**a brand new A-c. motor**

New design gives users better protection from the inside out, simplified lubrication, better response and improved all around performance. The Duty Master a-c. line, from protected to totally-enclosed, explosion-proof, 1 to 250 hp. is ready for delivery *now*.

NEW DUTY MASTER BULLETIN now available with specific information about its advanced engineering qualities and design features. Write for B-2106. B-1646

RELIANCE ELECTRIC AND ENGINEERING CO.
Dept. 2412A CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

▲ For more details circle NED-83 M9 on enclosed inquiry slip ▲

*Only Weston brings you*

## SUCH A FEATURE-FULL THERMOMETER

- Rugged all-stainless-steel construction, including welds!
- In-line scales and pointers eliminate parallax error!
- Removable bezel permits quick on-the-job window replacement!
- New gasket material provides extra-tight sealing power!
- Guaranteed accuracies — within ± 1% of range!
- Standard external adjustment feature!
- Full line of standard sizes, stem lengths, ranges!

THE NEW WESTON '4000 SERIES' HEAVY-DUTY BI-METAL THERMOMETERS

FOR NEW FREE LITERATURE giving full details, and name of local distributor, contact your nearby Weston representative . . . or write to Daystrom-Weston Sales Division, Newark 12, N. J. In Canada: Daystrom Ltd., 840 Caledonia Rd., Toronto 19, Ont. Export: Daystrom Int'l. 100 Empire St., Newark 12, N. J.

WESTON Bi-metal Thermometers
A DAYSTROM UNIT
WORLD LEADER IN MEASUREMENT AND CONTROL

▲ For more details circle NED-84 M9 on enclosed inquiry slip ▲

## Make overhead space contribute to plant earnings

CAPACITIES ½ TO 5 TON

- SINGLE AND TWO SPEED MODELS

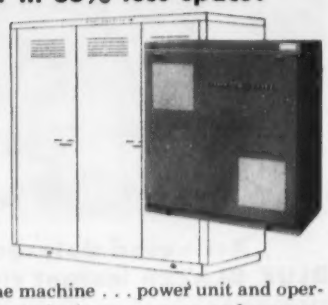
**METEORS** offer real materials handling help in many ways. Read all about their unusual operating advantages in the METEOR CATALOG *sent on request*. Illustrates all details of suspension and construction. Prices included.

CM HOISTS AND CHAIN
CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
*In Canada:* McKinnon Columbus Chain Limited, St. Catharines, Ontario

▲ For more details circle NED-85 M9 on enclosed inquiry slip ▲

## Reliance V★S Drives

**more power in 35% less space!**



Super 'T' V★S Drives are efficient, integrated units—with a wide range of stepless variable speeds from in-plant a-c. circuits.

New Super 'T' V★S units are simple to install and maintain. Only the drive motor needs to be placed at the machine . . . power unit and operator's control can be located wherever space and convenience permit. These new units utilize Class B insulation . . . resulting in a more compact package. 100% overloads of one minute duration are accomplished without failure.

WRITE FOR NEW RELIANCE V★S BULLETIN Number D-2506. Gives you complete information. Or call your nearest Reliance Sales Engineer for delivery schedules on full line, 1—350 hp. D-1648

RELIANCE ELECTRIC AND ENGINEERING CO.
Dept. 2412A2 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

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Play it Safe in HAZARDOUS AREAS!

GEMCO EXPLOSION•PROOF ENCLOSURES

Protect hazardous areas in your plant *economically* with Gemco explosion-proof pushbutton stations and enclosures. Lightweight cast aluminum construction, Gemco modular construction permits special pushbutton stations containing 1 to 64 units in one enclosure.

*Specials?* Gemco *standard* enclosures are available with receptacles, viewing windows, *plus* pushbutton stations and control panels.

Design and construction; NEMA types 7 and 9.

Write today for Bulletin No. 659 on Gemco explosion-proof enclosures

GEMCO ELECTRIC COMPANY
25685 West 8 Mile, Detroit 40, Mich.

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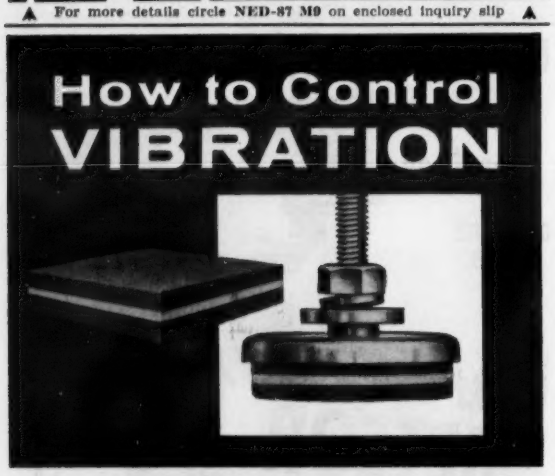
How to Control VIBRATION



Unisorb pads and Leveling Mounts reduce up to 85% of transmitted vibration and noise! Effective on everything from light laboratory equipment to giant machines.

- Complete selection of types for precision mounting, various loadings and machine lengths.
- Works two ways: Prevents external vibration from affecting equipment; Reduces machinery-generated vibration from being transmitted to floor.
- Allows higher driving frequencies, faster machine operation.
- High friction coefficient prevents "walking," cement available for extreme reciprocal thrusts.

Unisorb can be used by itself or incorporated into special-purpose mounts or machine designs. Send for new Unisorb Bulletin and details on Money-Back Trial Offer, NOW.

UNISORB
Division of The FELTERS Company
224 South St., Boston 11, Massachusetts
FE9-14

▲ For more details circle NED-88 M9 on enclosed inquiry slip ▲

Activated detergent gives BLUE BLAZES instant cleaning action!

This powerful detergent has been made more powerful by adding HCP!

When activated by magic HCP, BLUE BLAZES instantly attacks dirt, oils, etc., penetrates the grime, surrounds each particle, lifts them off the floor and holds them in suspension until they're removed by wet pickup vacuum, squeegee, or mop.

Gentle as rainwater. Despite powerful cleaning action, BLUE BLAZES with HCP is chemically neutral, safe for all floors.

Because it is completely non-ionic, BLUE BLAZES with HCP is able to pick up both positive and negative charged dirt particles. Also, it leaves no film or other residue which would help create static charges that attract and hold dirt particles to the floor.

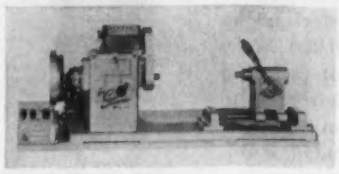
In hard water or soft, cold or hot, BLUE BLAZES works equally well. Easy to rinse, too, for even in hard water, it leaves no dull scum or soap film behind.

MULTI®-CLEAN Method

*For more information, write . . .*
MULTI-CLEAN PRODUCTS, INC.
Dept. Ne-32-129 2277 Ford Parkway, St. Paul 16, Minn.

▲ For more details circle NED-89 M9 on enclosed inquiry slip ▲


## MANUAL WIRE WINDER has four variable speed ranges



Winding speeds of 300, 400, 800, and 1800 rpm at full ½-hp torque rating are provided by Model 510-AM heavy-duty hand winder. It will wind wire gages as heavy as No. 10 AWG on spools up to 8-in. diameter as well as extremely fine wires. Machine has ½-hp 5000-rpm 115-v ac motor with rheostat foot pedal, a resetting automatic counter, and a magnetic brake. It accommodates coil diameters up to 12 in. Made by Geo. Stevens Mfg. Co., Pulaski Road at Peterson, Chicago 46, Ill.

▲ For more details circle NED-90 M9 on enclosed inquiry slip ▲

## SHOP TOWEL DISPENSER delivers bundle of five clean towels

More compact cabinet, improved electrical control center, and a positive towel-feed transport utilizing a motor driven jackscrew are features of the improved Texel automatic shop towel dispenser. The Series 200 machine delivers a bundle of five clean towels when an equal number of soiled towels is inserted into it. Machine can be placed in convenient locations in the plant for accurate control of shop towel use. Made by Industrial Wiping Cloth Co., Cleburne, Tex.

▲ For more details circle NED-91 M9 on enclosed inquiry slip ▲

## MATERIAL LEVEL PROBE for use in level gaging systems

Level of such granular conductive materials as coke, coal, wet sand, and ore can be determined accurately with this capacitance type Procetrol probe and a Model 959 level gage. Operating principle is based on a change in capacitance as the height of the material being measured rises or falls. The glass fiber epoxy tube withstands abrasion. Standard length is up to 10 ft, but lengths to 50 ft can be had by adding screw-on sections. Electrical connection is through explosionproof condulets, and probe is mounted in storage tank or vessel with stainless steel fittings. Made by Magnetic Instruments Co., 546 Commerce St., Thornwood, N. Y.

▲ For more details circle NED-92 M9 on enclosed inquiry slip ▲


For Extra Abrasion Resistance and Dress Glove Comfort ...Specify PIONEER Stanflex Gloves

Made of Long-Wearing, Pylox Coated Jersey—that stays flexible under all working conditions, yet actually outwears leather and cloth.

Tailored snug-to-tip fingers, and seam-free design provide greater working comfort, eliminate hand chafing.

Four Stanflex glove styles are available with a new "Aero-Vent" back that ventilates hands as they move.

Send For PIONEER'S *FREE* Foolproof Glove Selector

The PIONEER Rubber Company
234 Tiffin Road, Willard, Ohio

Gentlemen:
Please send me: (513)
☐ New "Foolproof Glove Selector" by PIONEER
☐ Pioneer's New Industrial Glove Catalog
☐ 17" x 22" Full Line Glove Wall Chart

Firm _____
Address _____
City _____ Zone ____ State _____
Requested by _____

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HOLTITE Heat Sealed ENVELOPED SCREWS for manufacturers who supply screws with the product

ENVELOPES available from stock are White Kraft—Brown Kraft and transparent Cellophane — or any combination. SPECIAL papers and colors, or plastic can be furnished quantity permitting.

ENVELOPE SIZES can be 2", 3" or 4" wide and any length from 2" to 5".

ANY NUMBER and variety of screws and/or nuts can be enveloped together, subject to capacity of envelope.

DESCRIPTION, instructions, name, trademark, etc. can be printed on envelopes at small extra cost.

ELIMINATE loose screw counting and wrapping. Save time, cost, complaints. No overage — no shortage. Screws heat-sealed in polyethylene coated paper or cellophane — protected from moisture. For details, write Dept. ND.

CONTINENTAL SCREW COMPANY, NEW BEDFORD, MASS.
HOLTITE FASTENERS
HOLTITE PHILLIPS AND SLOTTED HEAD
WOOD • MACHINE • TAPPING • THREAD FORMING • SEMS • NYLOK

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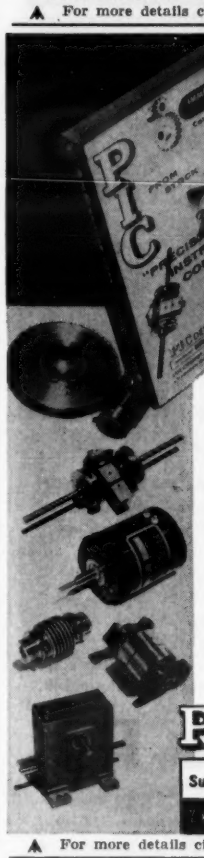
FREE! 416-Page Catalog



PIC MASTER CATALOG #20
Lists over 10,000 PRECISION INSTRUMENT PARTS and ASSOCIATED COMPONENTS Available From STOCK!

*Completely illustrated, with detailed drawings, specifications and prices.*

GEARS • SHAFTS • COLLARS • CLUTCHES • BEARINGS • COUPLINGS • DIFFERENTIALS • SPEED REDUCERS and many other Precision Engineered Parts & Components.

Send for your copy of this new, enlarged catalog, today.

PIC DESIGN CORP.
Subsidiary of BENRUS WATCH COMPANY, Inc.
477 Atlantic Ave., East Rockaway, L.I., N.Y.

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Sta-Warm ELECTRICALLY HEATED RECTANGULAR TANKS for melting and dipping compounds, cleaning, degreasing

Custom built to any practical size, shape, temperature requirements you may specify. Because it is heated uniformly on sidewalls and bottom by the famous "Sta-Warm Method" it will make your most difficult-to-handle compounds behave. Close temperature tolerances.

Two compartment dipping tank. 44 gal. cap. Heated gate valve drain.

Write FOR DESCRIPTIVE BULLETIN TODAY

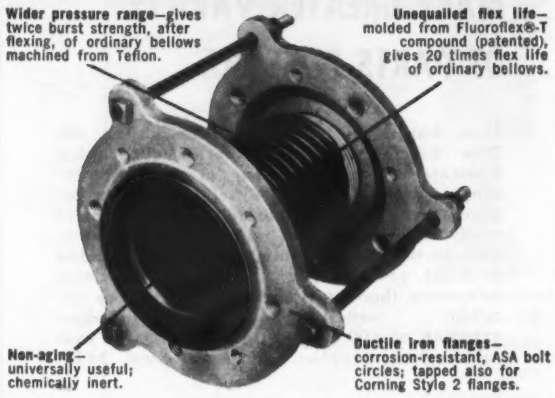
"If You Can Wrap a String Around It, Sta-Warm Can Heat It for You."

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO
Subsidiary of ABRASIVE & METAL PRODUCTS CO.

▲ For more details circle NED-96 M9 on enclosed inquiry slip ▲

# PERMANENT FLEX JOINTS

*Molded from TEFLON®*




Bulletin tells more about Fluoroflex joints. Write Dept. 410. RESISTOFLEX CORPORATION, Roseland, N. J. Other plants: Dallas, Tex.; Anaheim, Calif.

**RESISTOFLEX**

▲ For more details circle **NED-97 M9** on enclosed inquiry slip ▲

# MOST ADAPTABLE

## HORIZONTAL CONVEYOR

HYTROL Model T is quick to set up in your assembly, sorting, packing and other applications. Available in 26 standard lengths and 5 belt widths. Completely adjustable belt speeds and stand heights. Rugged construction, job-fitted to your requirements.

Write for new Hytrol *Complete Line* Catalog.

**HYTROL** *Conveyor Co.* **INC.**

1957 S. 54th Street Milwaukee 19, Wis.

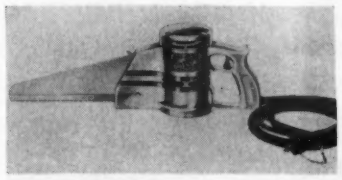
▲ For more details circle **NED-98 M9** on enclosed inquiry slip ▲

## HIGH TENSILE NUT
### accommodates up to 8-degree slope

Self-aligning six-point Kaylock H19300 nut and H19301 washer combine to permit angular misalignment with a slope up to 8 degrees. The high tensile fastener is designed for 160,000-psi short thread bolts. Its compactness permits use of wrenches that are two sizes smaller than those used on standard AN and NAS nuts. Made by **Kaynar Mfg. Co.**, Kaylock Div., Box 2001, Terminal Annex, Los Angeles 54, Calif.

▲ For more details circle **NED-100 M9** on enclosed inquiry slip ▲

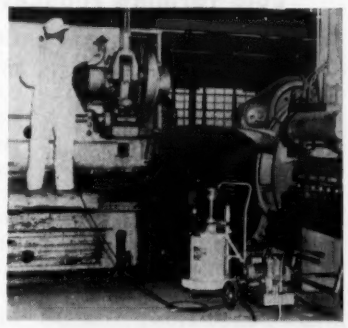
## POWER HAND SAW
### reciprocating blade has rigid back



By cutting on both forward and return strokes, the blade of this power hand saw provides eight thousand $1\frac{1}{8}$-in. cutting strokes per minute. The reciprocating blade mounted on a rigid backing has no kick or pull and its entire length is usable, providing an 8-in. cutting capacity. Blade design removes sawdust from the kerf, and a built-in blower keeps the work line clear. The 8-lb saw operates on alternating or direct current. Made by **Wells Mfg. Corp.**, 1313 Harding St., Three Rivers, Mich.

▲ For more details circle **NED-101 M9** on enclosed inquiry slip ▲

## AIRLESS SPRAYING SYSTEMS
### minimize paint overspray



Pacer 300 high pressure pump used with two airless paint spraying systems delivers paint from the original container at up to 3000 psi when necessary and in sufficient quantity to supply two guns. Both offer considerable reductions in overspray, as compared with air-powered systems. Durable nylon pressure fluid hose with reusable hose fittings, or stainless steel hose are used with the carbide tip-equipped Model 39 spray gun. Larger of two units fits on a 55-gal drum, and the other fits on a 10-gal container into which a 5-gal can may be placed. Material containers are not pressurized. Both require air pressures between 35 and 110 psi. Made by **Binks Mfg. Co.**, 3114 Carroll Ave., Chicago 12, Ill.

▲ For more details circle **NED-102 M9** on enclosed inquiry slip ▲

**AURAND**
**CLEANING TOOLS**
**ELECTRIC OR PNEUMATIC MODELS**

Surfaces are cleaned quickly with AURAND on the job. Hardened steel cutters zip away stubborn accumulations from iron, steel, brick, concrete. Adjustable depth shoe protects surface . . . assures uniform cleaning. No special skill required. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

**See Aurand tools at Booth 1417, Plant Maintenance & Engineering Show, Philadelphia—Jan. 25-28**

**AURAND MFG. & EQUIPMENT CO.**
**1322 Ellis St., Cincinnati 23, Ohio**

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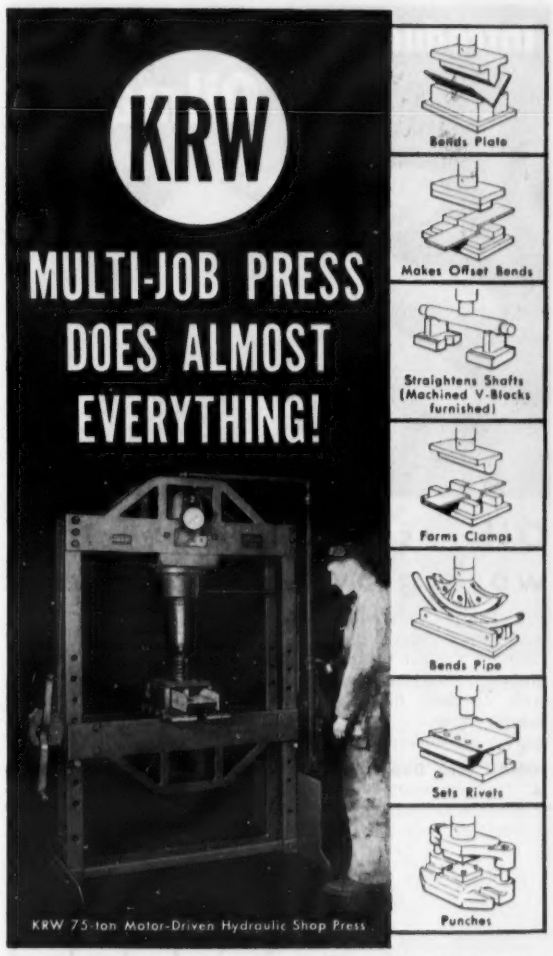


**JACK OF ALL JOBS**: This KRW Motor-Driven Hydraulic Shop Press performs all sorts of work that calls for a "squeeze" (up to 75 tons) There's practically no limit to what it can do. The jobs shown above are but a few. Dies can be readily improvised for hundreds of applications.

**QUICK CHANGEOVER**. It usually takes only a minute or two to switch from one setup to another. As a result, many a KRW shop press that has been purchased for one job is now doing dozens.

**SPEED, ACCURACY AND OPERATING EASE**: Developed by a maker of numerous types of hydraulic presses, KRW features assure bonus performance: Bed and crown members truss-reinforced. Any pressure up to rated tonnage quickly attained. Convenient lever controls ram. Excellent inching. Spring return of ram. Direct-connected motor drive.

**GET THE FULL STORY** on this versatile machine as well as other KRW hydraulic shop presses (motor-driven and hand-operated, 25 thru 150 tons). Mail the coupon below.

**K. R. WILSON, INC.**
**1228 MAIN STREET, ARCADE, N. Y.**

**MAIL** illustrated bulletins on KRW Motor-Driven and Hand-Operated Shop Presses to us, without obligation.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____

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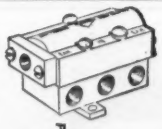

the best 4-way 1/4" single pilot valve made costs $21.00 at

# ALKON

## a dollar more gets you the best double pilot valve.

**And the quality, like the price, is unbeatable. Working and sealing surfaces are so hard they won't wear out—ever! Alkon single and double pilot valves operate at *vacuum* to 200 p.s.i. Like all Alkon valves they are sub-base mounted at no extra cost!**

ALKON PRODUCTS CORPORATION
*200 Central Ave., Hawthorne, N. J.*

ALKON

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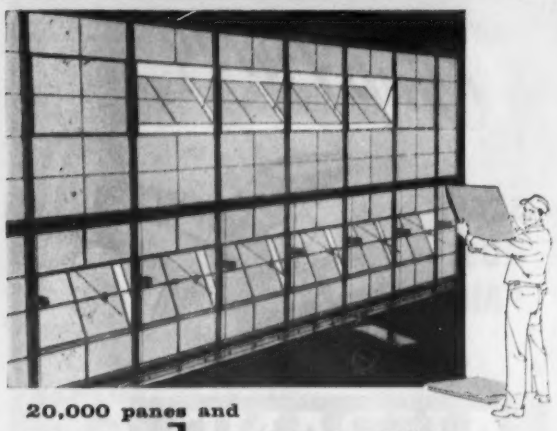


20,000 panes and

# no damage...

when Firestone glazed with Structoglas

Hurricanes in Cuba, earthquakes in the Philippines, vandalism in the States made glazing replacement a frequent expense for Firestone's far-flung plants. Easy-to-install glazing of shatterproof Structoglas stopped breakage, let in natural light without harmful ultraviolet. Eliminate costly breakage in your plant. Glaze *once and for all* with Structoglas.

5903

Write for Detailed Literature

structoglas®

STRUCTOGLAS DIVISION
International Molded Plastics, Inc., Dept. 1206, Cleveland 9, Ohio

▲ For more details circle NED-105 M9 on enclosed inquiry slip ▲



Introducing . . . Oilmacs!

## Oil-resistant terry cloth work gloves by JOMAC®

Free sample pair will convince you . . . oil runs off these new Jomac gloves like water off a duck's back! Moreover, Oilmacs are far more cut-resistant than expensive leather gloves . . . are interchangeable . . . and can be reconditioned with virtually no loss in oil resistance. Write for free sample now . . . and you will soon start replacing those heavy, oil-soaked gloves with light, flexible Oilmacs!

**JOMAC Inc., Department G, Philadelphia 38, Pennsylvania**

▲ For more details circle NED-106 M9 on enclosed inquiry slip ▲

IN FASTENERS SOUTHERN IS

# GROWTH

Someone has said that it is no longer possible for business to stand still, for those which are stationary are left behind by those who are "on the grow." Southern is dedicated to making better fasteners, giving better service, providing better packaging—at prices that are fair and competitive. It is not strange that Southern Screw's growth has kept pace with those we serve.

If yours is a growth company, Southern Screw in all probability is having an important part in your progress. If we are not now growing with you, perhaps it would be mutually beneficial to become a part of each other's growth pattern.

Direct your inquiries for quotations and samples to: Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

Machine Screws & Nuts - Tapping Screws - Wood Screws - Stove Bolts
Carriage Bolts - Dowel Screws - Hanger Bolts - Drive Screws

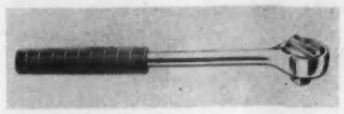
Manufacturing and Main Stock in Statesville, North Carolina

Southern SCREW COMPANY

Warehouses: New York • Chicago
Dallas • Los Angeles

▲ For more details circle NED-107 M9 on enclosed inquiry slip ▲

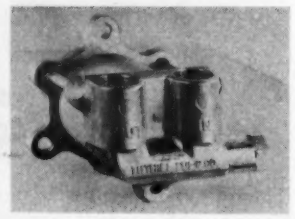

## WRENCH RATCHET
### 3/8 and 1/2-in. drives offered



Grip swing of only 3/4 in. of the Series 500 ratchet permits wrenching in close quarters. It is equipped with slipproof, oilproof rubber grips and double safety pawls. Model with 3/8-in. drive has 41 teeth and the 1/2-in. drive model has 45 teeth. Double pawl engagement produces 82 and 90-tooth action, respectively. Additional features are double lock ring seals to exclude dirt, bar reverse knob, and easily replaced inner unit. Made by **Wright Tool & Forge Co.**, E. State & Wright Avenues, Barberton, Ohio.

▲ For more details circle NED-108 M9 on enclosed inquiry slip ▲

## WATER PUMPS
### in 35 to 95-gph capacities



Four models in the T Series of vane-type water pumps are rated for capacities from 35 to 95 gph at 100 psi differential, with rated speed of 1725 rpm. Developed for sanitary applications, pumps have stainless steel and graphitar construction. Modification adapts them for use with other fluids. Units have either right or left hand inlets, with or without built-in relief valves and bypasses. Several alternate shaft extensions are also available. Made by **Tuthill Pump Co.**, 959 E. 95th St., Chicago 19, Ill.

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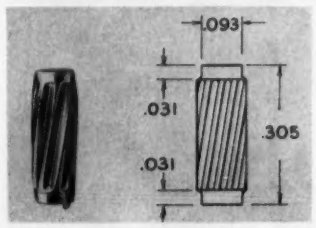
## FLUTED PIN
### cold forming reduces costs




Cost reduction of 85 per cent is achieved by cold forming this stainless steel fluted pin, formerly made by screw machining. Cold heading also affords advantages of increased strength, smooth rounded corners without burrs, and close dimensional tolerances. Cost per thousand fasteners has been dropped from $19.50 to $2.95. Made by **John Hassall, Inc.**, Dept. TR, Westbury, L. I., N. Y.

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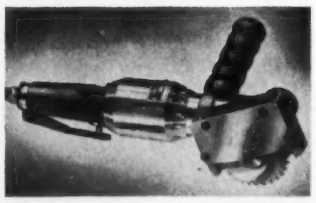
## AIR-POWERED SAW
### offered in 13 blade speeds



Nonferrous metals, phenolic resins, glass fiber, and mild and stainless steel can be cut with this air-powered portable saw. Thirteen blade speeds from 500 to 16,000 rpm are optional. High speed steel cutters are diamond coated or carbide tipped. Maximum diameter is 3 1/4 in. The 5 1/2-lb, 13-in. long tool will production-cut extrusions, channels, rods, and other shapes. Made by **A. B. Quackenbush Co.**, 4216 San Fernando Rd., Glendale 4, Calif.

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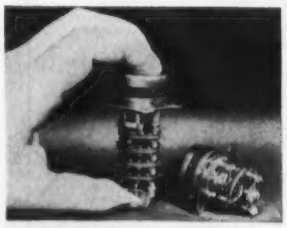
## MINIATURE ROTARY SWITCH
### weighs under 3 oz, is 1.5 in. long



Stepping, counting, programming, circuit selecting, and homing are uses for the Ledex BD2E subminiature rotary switch. It is 1.5 in. long, has a diameter of 1.375 in., and weighs less than 3 oz. Actuated by a Ledex No. 2 rotary solenoid, it is remotely controlled and can be either self-stepped or externally impulsed. Switch can hold up to four 12-position circuit wafers with 2, 3, 4, 6, or 12 electrical position selective controls. It is available for operation on 3 to 300 v dc. Flange mounted unit has an operating range of −55 to 80° F. Hermetically sealed model is available. Made by **G. H. Leland, Inc.**, 123 Webster St., Dayton 2, Ohio.

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NEW TYPES OF

# SILASTIC®

SILICONE RUBBER

## MAKE GREATER VARIETY OF PARTS POSSIBLE

New things are happening with Silastic, the Dow Corning silicone rubber. Your rubber fabricator can now engineer for you a greater range of parts than ever before. Just introduced, these new types of Silastic process more easily, therefore can be formed into more complex parts. Silicone rubber can be compounded to meet your specification, with even closer tolerances than previously. Properties are excellent . . . parts remain rubbery after 3 days exposure at 600 F. Get the details from your rubber parts supplier. Or, write Dept. 5424.

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MIDLAND, MICHIGAN

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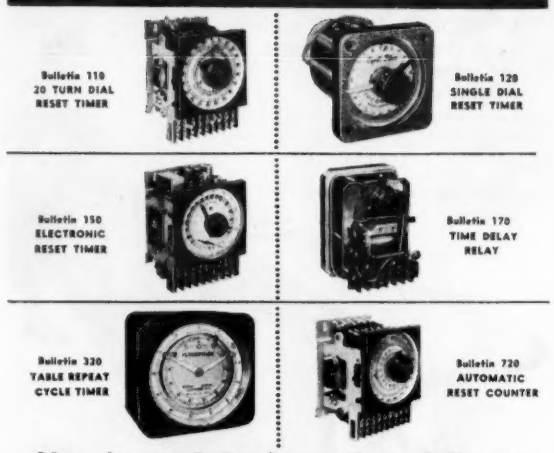


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See your local phone directory for name and location of your nearest EAGLE Representative. He will be happy to make recommendations and help you engineer your TIME-COUNT problems.

*Write* EAGLE SIGNAL COMPANY, Dept. NED-1259, Moline, Illinois, for descriptive Catalog 351.

EAGLE SIGNAL COMPANY
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MANUFACTURERS OF THE MOST COMPLETE LINE OF INDUSTRIAL TIME-COUNT CONTROLS

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Now, you can afford to have this new low-cost, fully automatic, combination riveter and eyeletter in your own shop. With it you get fast, automatic feeding and setting of tubular rivets — from the smallest up to 5/16" in diameter and 3/4" long. Easily interchanged tracks and tools convert the unit into an eyeletting machine.

If you fabricate, fasten, assemble or decorate materials or products with tubular rivets or eyelets — investigate the ETCO 500 right away. Send for bulletin 500 today.

for Printed Circuits, Component Assemblies, Cloth & Leather Assemblies

EYELET TOOL COMPANY, INC.
236 BROADWAY
CAMBRIDGE, MASSACHUSETTS

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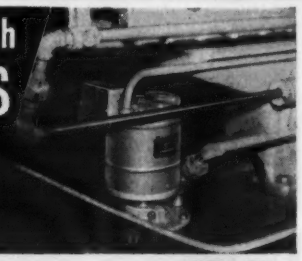
REPLACE with GRAYMILLS Superflo Coolant Pumps

1/25 TO 2 H.P.



*You'll get...*

★ Smooth, quiet performance
★ Better appearance
★ Better design

AT LESS COST

AVAILABLE TO JIC STANDARDS

Specify these Superflo immersion type coolant pumps for replacement and original equipment. 36 models in various lengths. Abrasive proof, top rated motors, simplified mounting and electrical connections, greater pumping efficiency at less cost, plus COMPLETE interchangeability with other makes.

Designed and priced for Machine Builders' use.

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*Send for new catalog—with interchangeability tables*

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Don't spoil it- KROIL it!

Don't ruin a valuable piece of equipment merely because some part is rusted tight. Apply KROIL, the amazing new chemical lubricant that creeps into millionth inch spaces (proved by laboratory tests), dissolves rust, supplies necessary lubrication and . . .

*Loosens Frozen Parts*

18,000 of America's leading plants can't be wrong. They have used KROIL for ten years and depend on it to save expensive labor and valuable parts. They say: "Kroil loosened bushings after a 12-ton press had failed" . . . "on repairing heat treat trolleys formerly destroyed every nut. Now Kroil saves them all, and time, too."

*You too can get these results. Try KROIL on money-back basis.* Gallon, $4.00; with Kroiler squirt gun, $4.95, f. o. b. factory.

*Ask for GENIUS AT WORK—a free publication full of ideas for maintenance men.*

KANO LABS. 1074 Thompson Lane Nashville 11, Tenn.

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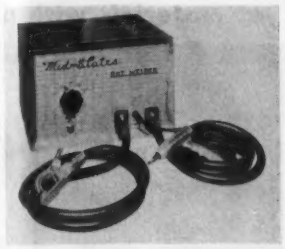
## DIE REPAIR WELDING
### pellet is fused into cavity



Cavities, undercuts, scratches, and other imperfections in injection molding dies can be repaired without removing them from the machine by Dot Welding. Process involves fusing metal pellets into the damaged area with the Model D27 gun type welder. Fusion is produced by a short pulse of high density electric current. Pellet melts and flows into the cavity without harming die metal. Made by **Mid-States Welder Mfg. Co.**, 6025 S. Ashland Ave., Chicago 36, Ill.

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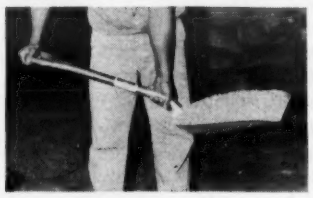
## ALUMINUM SCOOP
### offers saving in time, exertion



Made with a 10-gage seamless aluminum alloy blade, this aluminum scoop enables the user to perform a given task 9 per cent faster with 17 per cent less work, as compared with using a steel scoop. In one test 5600 lb were moved in 23.7 min with the steel scoop, as compared with 21.6 min with the aluminum scoop. Made by **Wood Shovel & Tool Co.**, 901 S. Roosevelt Ave., Piqua, Ohio.

▲ For more details circle NED-120 M9 on enclosed inquiry slip ▲

## SMALL RIDING TRACTOR
### drive is controlled by pushbutton

Automotive type steering and differential axle for uphill and downhill braking and traction without damage to surface on which it is run are features of the 7-hp Ride-a-matic riding tractor. Versa-Matic drive permits instantaneous selection of six forward speeds from ½ to 6½ mph without clutching. Reverse speeds range from ½ to 2 mph. Drive is controlled by a single pushbutton type lever. Electric starter kit and individual wheel brake kit for better turning in loose soil or snow are options. Tractor attachments include 38-in. rotary mowers, 30-in. reel mower, 68-in. combination mower, 32-in. lawn sweeper, aerator, and 44-in. sickle bar. Made by **Food Machinery & Chemical Corp.**, Bolens Products Div., Port Washington, Wis.

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GET THESE TWO USEFUL MANUALS TODAY

Design engineers will find both these GRAMIX engineering bulletins extremely helpful. No. 18 covers design, metallurgical requirements, and alloy selection factors for GRAMIX bearings. No. 19 covers GRAMIX Machine Parts. Both are packed with information that every engineer should have to take full advantage of the GRAMIX process. Write for your copies today.

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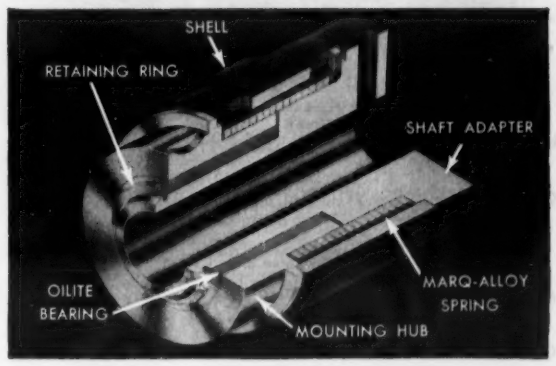
*You get all these advantages only with*

CURTISS-WRIGHT

*OVER-RUNNING, INDEXING ON-OFF & ON-OFF INDEXING*

CLUTCHES




- Instantaneous and non-slipping grip with special Marq-alloy steel spring
- High-speed operation with full efficiency . . . maintains constant torque throughout life of clutch
- Immediate engagement and disengagement, even under full load . . . with only the lightest actuating force
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- Available in 8 sizes from ⅛" bore to 1" bore
- ALL SIZES IN STOCK FOR IMMEDIATE DELIVERY

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1145 Galewood Drive, Cleveland 10, Ohio

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*FAST, Accurate, Intricate Cutting Operations in Steel and Other Materials*

**Aminco's CUTTING-OFF MACHINE** cuts steels and other metals, glass, stone, plastic and quartz quickly and accurately. Applicable to every type of industrial and laboratory installation, the unit is simple to operate, even for unskilled personnel. Special features include a miter gage & scale; foot-operated control; spray heads that play a steady stream of coolant to cutting wheel; adjustable stop to permit cutting of exact duplicate pieces; cutting table mounted on ball bearings; bonded, abrasive cutting wheel, 12 in. in diameter; models available for 115, 230 and 440 volts.

5-2416 Cutting-off Machine, 115 volts, 60-cycle, single phase, 1½ h.p. motor, size: 25 x 25 x 48 inches high.....$673

**Full Information in Bulletin 2273-U2 Free upon request**

AMERICAN INSTRUMENT CO., INC.
8030 Georgia Ave., Silver Spring, Maryland

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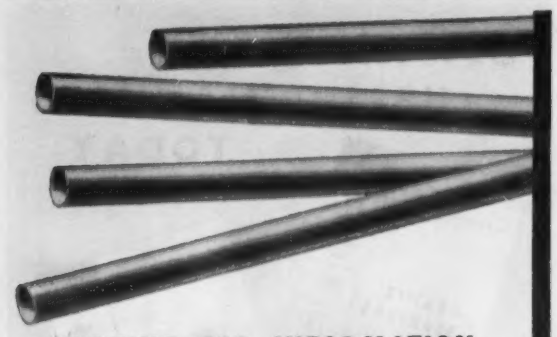

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DIVISION OF
CALUMET & HECLA, INC.
17272 Southfield Road
Allen Park, Michigan
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

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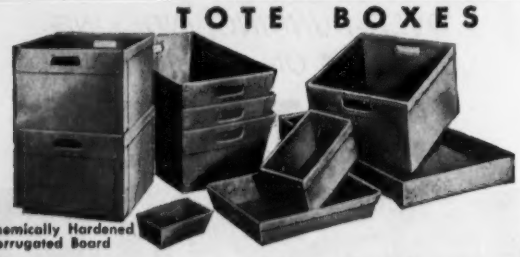
LOOKING FOR WAYS TO CUT COSTS?

FAMOUS "CHEM-BOARD"* CONVOY TOTE BOXES



*Chemically Hardened Corrugated Board

Increase Payload . . . Reduce Cost

LIGHTWEIGHT—2 cu. ft. Convoy Stacking Tote Box weighs only 10 lbs.

CHEMICALLY HARDENED CORRUGATED BOARD
Many Convoy Tote Boxes have been in active daily use for more than two years—exclusive chemical impregnation process binds and hardens corrugated board.

NO MAINTENANCE—Convoy Tote Boxes are so inexpensive that they can be discarded when they finally become unserviceable.

OVER 200 Stock Sizes Available Now

Standard and Custom-made Nesting — Stacking — Vertical CHEM-BOARD TOTE BOXES.

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CONVOY, INC.
P. O. Station B, 216-N
CANTON 6, OHIO

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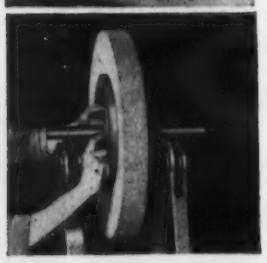
Check balance and runout accurately with Sundstrand accessories



**Check Runout Within .0001" Limits** on gears, sprockets, pinions, etc. Sundstrand "one-hand control" over all moveable elements leaves other hand free to control rotation of part. Standard bench centers in ten sizes range from 6" x 18" to 24" x 72".

**Balance Grinding Wheels, Flywheels, Pulleys,** etc., quickly and precisely on any of nine standard sizes of Sundstrand balancing tools. All but No. 5 extra-heavy duty size are portable, can be placed where needed without leveling. Capacities range from 12 to 24,000 lb. No limit on "swings" or distance between centers.

DISTRIBUTORS:
Sundstrand Bench Centers and Balancing Tools offer attractive sales opportunities. Investigate. Details on request.

SUNDSTRAND-AMERICAN BROACH
DIVISION OF SUNDSTRAND CORPORATION
ANN ARBOR, MICHIGAN

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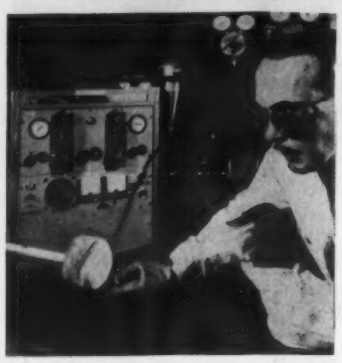
## REFRACTORY SPRAY GUN applies many high melting point materials with plasma type flame

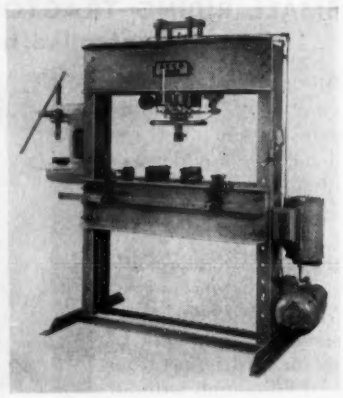


Titanium carbide, tungsten, chromium, and titanium can be deposited on most ceramic base materials or metals without metallurgical, crystallographic, or chemical changes by the Plasmatron spray gun. It operates on such gases as argon and nitrogen at power levels to 40 kw. Practically any material, including refractory metals, borides, silicides, and nitrides, can be spray-coated on steel, molybdenum, niobium, aluminum, magnesium, and many plastics with the 4-lb, 3½-in. long gun.

Oxides, carbides, and borides can be compounded with various metals to improve adhesion, oxidation resistance, and density. Controlled spray coatings also allow the matching of thermal coefficients of expansion of coatings and base materials. Gun is normally hand held, but can be adapted for automatic traverse coating applications. Made by **Giannini Plasmadyne Corp.**, 3839 S. Main St., Santa Ana, Calif.

For more details circle NED-127 M9 on enclosed inquiry slip

## ELECTRIC HYDRAULIC PRESSES 60 and 80-ton units have enclosed hydraulic systems



Various pressroom needs are met by 60 and 80-ton electric hydraulic presses added to company's line. Machines have completely enclosed hydraulic systems with oil supply filter, winch - adjustable worktable height, handwheel-controlled rapid approach to work, and safety bypass valve to protect press from overload.

Both 60 and 80-ton models are available equipped with 2 or 5-hp motors which produce ram speeds from 6 to 17 ipm at capacity. Ram travels are 7⅛ and 6 3/16 in. respectively with maximum ram to table distances of 35⅝ and 31⅞ in. The 80-ton unit equipped with 3-ton arbor press is shown. Made by **American Chain & Cable Co.**, ACCO Equipment Div., York, Pa.

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"Wouldn't use any other sealer"

KEY® Graphite Paste, the tight sealing pipe joint compound, goes on easy, seals fast. It's ideal for oil, gas, and high pressure steam lines — safe for flammable liquids (officially listed by Underwriters' Laboratories). Expands under heat — lubricates and protects threads while it seals. Joints don't freeze — disconnecting always possible.

Key Graphite Paste is applied with a brush — no crumbling or waste. Extra long open-can life eliminates thinning and stirring.

Available in 1 lb., 2¾ lb., 10 lb., and 500 lb. drums. WRITE FOR CIRCULAR 240-B AND FREE SAMPLE.

W-K-M DIVISION OF ACF INDUSTRIES INCORPORATED
Dept. Z-12, P.O. Box 2117, Houston, Texas

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CAR PULLER

MORE QUALITY FEATURES

- Greater safety factor for personnel . . . no rope to snub with wire rope car puller.
- Save time, labor and money . . . one man can quickly and easily spot several fully loaded box cars.
- A type and size to fit your exact requirements.
- Rugged construction for trouble free service.
- Stocked for immediate delivery.

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STANDARD PRODUCTS DIVISION
STEPHENS-ADAMSON MFG. CO.
12 RIDGEWAY AVENUE • AURORA, ILLINOIS
PLANTS LOCATED IN: LOS ANGELES, CALIFORNIA CLARKSDALE, MISSISSIPPI • BELLEVILLE, ONTARIO

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IS YOUR CUTTING TIME THIS FAST?

TIME FOR SOME WALLACE "CUT-MACHINING" OPERATIONS

| MATERIAL | TIME REQUIRED |
|---|---|
| 1"x1"x⅛" Angle Iron | ¼ SEC. |
| 1" Steel Tubing | ⅜ SEC. |
| ⅝" Steel Bar | ½ SEC. |
| 3"x 16 gauge Stainless Steel Tubing | 2½ SEC. |
| 4"x2½"x¼" I-Beam | 10 SEC. |
| 4" Iron Pipe | 16 SEC. |
| 6"x6"x1" Angle Iron | 28 SEC. |

Cut Ends can have 30 to 70 micro finish, often eliminating secondary operations.

Wallace 1959 Modular "Cut-Machining" Units are available with gauging assembly, hydraulic or pneumatic clamping devices and with automated controls. With 16", 18", 20" and 26" cutting wheels.

DOES A WALLACE "CUT-MACHINING" UNIT BELONG IN YOUR PLANT?

If You Prefer
Write for 12 Page Catalog containing complete specifications and examples of fast Wallace "Cut-Machining" units.

If your cutting time is more than the examples shown, it will pay you to investigate Wallace. If it is important that the cut ends be so smooth, that secondary operations are unnecessary, then that is another reason why "Cut-Machining" will lower your costs.

Investigate this industry proven machine. Without obligation, our engineers will analyze your work; will make recommendations for your jobs.

*Call Factory* BUckingham 1-7000
CHICAGO
and Reverse Charges PLEASE

WALLACE SUPPLIES MFG. CO.
1312 W. Wolfram Street • Chicago 13, Illinois

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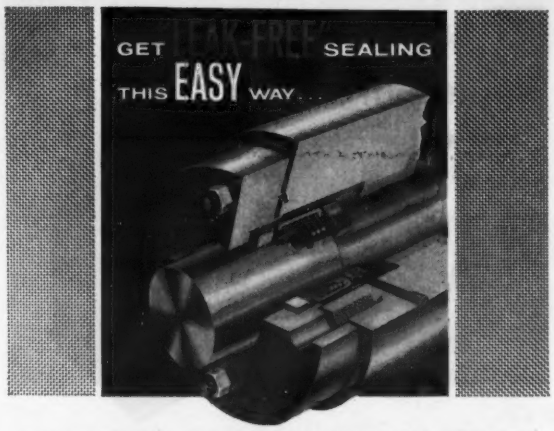


## GARLOCK PK MECHANIPAK* SEALS

*Easy to install*—no parts to "put together." Rotating portion simply slides onto shaft; stationary portion positions quickly into counterbore of gland. *Easy to maintain*—once installed, no further adjustment is necessary. No parts of the seal move on the shaft or sleeve, eliminating wear on shaft. Sizes for shafts ⅜" to 3" . . . temperatures to 212° F, 150 psi pressures, 2000 fpm shaft speeds. Contact your local Garlock representative, or write for Catalog AD-150. THE GARLOCK PACKING COMPANY, Palmyra, N.Y. For prompt service, contact one of our 26 sales offices and warehouses throughout the U.S. and Canada.

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GARLOCK

*Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products*

Canadian Division: The Garlock Packing Co. of Canada Ltd., Plastics Division: United States Gasket Company

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## more ACCURATE • more CONVENIENT than any you've known!

THIS FEDERAL MIKEMASTER has an easily read Indicator instead of the barrel graduations usually found on micrometers: There's no need to interpret a vernier. Finest measurements are read directly from Dial's clearly calibrated scale graduated in .0001". Mikemaster always *gages with same pressure*. You can gage *fast* since there's no need of carefully applying correct gaging pressure. If it's *duplicate* parts you're measuring, you'll find the push button retracting anvil and tolerance hands particularly useful, permitting tool to be used as an Indicating Snap Gage.

Mikemaster is built to last, with sturdiness to spare, and the measuring surfaces are lapped tungsten carbide. Ask to see it . . . and try it on your work.

FEDERAL PRODUCTS CORPORATION
91712 Eddy Street • Providence 1, R. I.

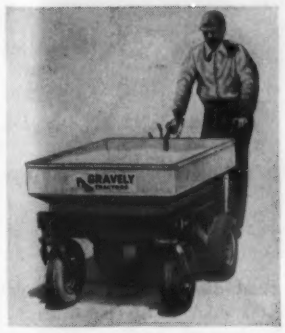
Ask FEDERAL First

FOR RECOMMENDATIONS IN MODERN GAGES . . .

Dial Indicating, Air, Electric, or Electronic—for Inspecting, Measuring, Sorting, or Automation Gaging

▲ For more details circle NED-133 M9 on enclosed inquiry slip ▲

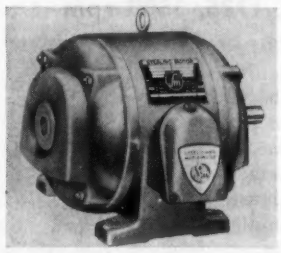

## SALT & SAND SPREADER attachment driven by 6.6-hp tractor




Powered by the 6.6-hp Gravely tractor, this Salt 'n Sand Spreader attachment will spread a 4 to 25-ft wide path with salt, sand, or any combination to a length of 1050 ft in one loading. Hopper rests on a carriage that is used for other purposes. The spreader is one of five available snow removal tools powered by the tractor. Made by Gravely Tractors, Inc., Dunbar, W. Va.

▲ For more details circle NED-135 M9 on enclosed inquiry slip ▲

## MULTISHIELDED MOTORS operate under adverse conditions



Sealed bearings, a neoprene sealed terminal box, diaphragm seal, neoprene labyrinth seal, silicone sealing, and neoprene insulated lead wires are among the Sterlicone dripproof motor features which suit it for operation under adverse conditions. It can be used where moisture, high humidity and temperature, salt spray, dust, oil, and chemically controlled atmospheres exist. Ratings from ½ to 50 hp, any phase, frequency or voltage, and torque or slip characteristics, are available with multispeed windings. Made by Sterling Electric Motors, Inc., 5401 Telegraph Rd., Los Angeles 22, Calif.

▲ For more details circle NED-136 M9 on enclosed inquiry slip ▲

## GLASS TUBE PURGE METERS rated up to 30 gph or 125 cfh

Constructed for severe industrial use, these glass tube purge meters operate reliably in purge, vent, bleed, liquid level control, and other uses. Metering tubes are either 3-in. scale for easy reading, or 1½-in. scale for space saving. All parts are interchangeable. Wide choice of metering tubes and floats cover a flow range of 0.01 to 30 gph water and 0.12 to 125 cfh air. Made by Wallace & Tiernan Inc., 25 Main St., Belleville 9, N. J.

▲ For more details circle NED-137 M9 on enclosed inquiry slip ▲


DIEMAKERS! this DIE-PART PORTELVATOR®

(OR AN ENGINEERED VARIANT)

will speed your work and ease your "handling."

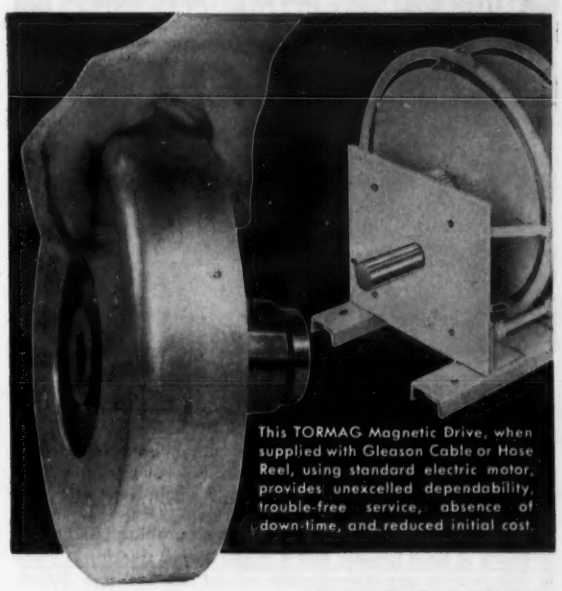
Top plate raises and lowers for fitting operations and rotates 360° to give easy access to die.

Write for our FREE Bulletin No. 2548. It gives full details.

THE HAMILTON TOOL COMPANY • 901 HANOVER STREET
HAMILTON • OHIO • U. S. A.

▲ For more details circle NED-138 M9 on enclosed inquiry slip ▲





This TORMAG Magnetic Drive, when supplied with Gleason Cable or Hose Reel, using standard electric motor, provides unexcelled dependability, trouble-free service, absence of down-time, and reduced initial cost.

## GLEASON HOSE OR CABLE REELS with TORMAG MAGNETIC COUPLING

offer

UNEXCELLED DEPENDABILITY
ABSENCE OF DOWN-TIME
FASTER DELIVERY
CONTINUOUS FULL STALL
LOWER INITIAL COST
SHOCKLESS DRIVE
TROUBLE-FREE SERVICE

Tormag Magnetic Coupling is an exclusive first on Gleason Reels. It is a frictionless drive that delivers controlled torque and will operate in partial or continuous stall at all times with no damage to motor or coupling.

Tormag is available only on Gleason Cable and Hose Reels. Patents Applied For on use of Tormag with Hose or Cable Reels. Write for information on Tormag.

Gleason Reel Corp
Dept. A, 800 Horicon St., Mayville, Wis.
SPRING REEL HEADQUARTERS FOR ALL INDUSTRY

▲ For more details circle NED-139 M9 on enclosed inquiry slip ▲

## TRUCO DOES IT AGAIN!

### SLASHES COST IN CUTTING THROUGH HARD 12" CYCLOTRON WALL AT WASHINGTON UNIVERSITY

**JOB:** Cut four 14" openings through cyclotron wall to admit 12" pipes for storage of radioactive materials.

**TOOLS:** Truco Model C Portable Drilling Machine with 350 rpm motor and 6" Truco Diamond Drill Bits. Because of restricted space, machine was removed from its base and jacked between walls, providing rigidity and leverage for drilling. To shield workers from radioactivity, walls are a special pour which includes Meramec River gravel, making cutting tough. Using a 6" bit (instead of 14" O.D.) and drilling overlapping holes cut diamond bit cost in half. Total drilling time was only three days. Technical help was provided by Ray Martin Co. of Kirkwood, Mo., St. Louis area distributor for Truco products.

Truco unit is portable by one man; designed for high speed drilling in practically any location. Wired for 110 V, 60 cycles or less. Air motors for explosive conditions. Send for new catalog and name of nearest distributor.

*Top:* Cyclotron wall is in a hallway, space is very restricted. Note cores in foreground. *Bottom:* Making big hole by over-lapping small holes cut diamond bit cost 50%.

TRUCO MASONRY DRILLING DIV.
WHEEL TRUEING TOOL CO.
44-3200 W. Davison Ave. • Detroit 38, Michigan

▲ For more details circle NED-134 M9 on enclosed inquiry slip ▲

# Bench Tops

LAMINATED HARD MAPLE

Steel bench bases, legs and drawers available for use with Tolco Tops. Write for complete illustrations and prices.

ESTABLISHED 1894

**THE TOLERTON COMPANY**

265 N. FREEDOM AVE. · ALLIANCE, OHIO

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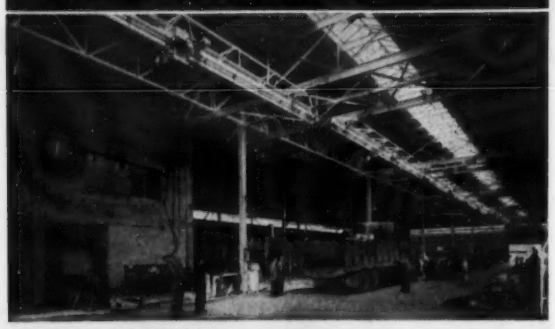
## What a Wonderful Warehouse!



***7 Cranes interlock...Span 6 bays 340 ft. long!***

Here's a metal distributing warehouse with no unloading docks! Seven American Monorail cranes unload directly from an indoor railway siding along one wall and from a 3-lane truck driveway thru the center of the building.

Transfer of loads from bay to bay poses no problem. All cranes interlock at fixed transfer points to allow swift transfer of stock to any point in any direction throughout this 340 ft. x 300 ft. warehouse!

A Monorail system can streamline your handling. Write for free literature.

**AMERICAN MONORAIL** 1116 E. 200th STREET CLEVELAND 17, OHIO

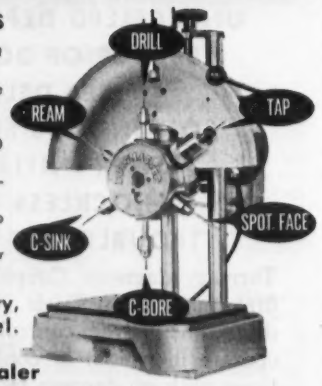
▲ For more details circle NED-143 M9 on enclosed inquiry slip ▲



## PRODUCTION DOUBLES with BURGMASTER 6 SPINDLE Auto-Indexing TURRET DRILL

**Unique Machine Features**

1. Power Indexing Turret at Operator Command
2. Pre-selective spindle speeds, automatically shifted
3. 12 spindle speeds — 350 to 6200 RPM
4. Pre-set adjustable stops—auto-indexed
5. Jig moving reduced to minimum
6. 6 spindles in 1/3 the floor space at 1/3 the cost




**Price $595, F.O.B. Factory, 1/4" capacity in steel. Write for Bulletin. See your nearest dealer**

**CASE HISTORIES**

**Hoffman Laboratories Div. Hoffman Electronics Corp.**

Gear Box Plate — 86 operations — 8 min. Production increased 100%, 1/3 floor space, accuracy +.0002, −.0000. 3 Burgmasters costing $1650 replaced single spindle drills costing $5000.

**Consolidated Electrodynamics Corp.**

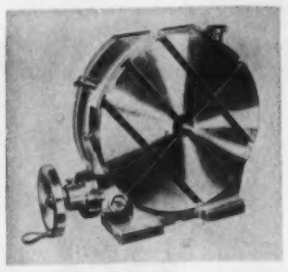
Galvanometer Body — 6 operations — Production increased 63%, Tolerances ±.0005", 650 miles jig moving saved per year, 1/4 floor space, $550 machine replaced 5 single spindles at $1650.

BURGMASTER AUTO INDEXING TURRET DRILL & TAP MACHINE

**BURGMASTER CORPORATION**
13228 South Figueroa Street • Gardena, California

▲ For more details circle NED-144 M9 on enclosed inquiry slip ▲

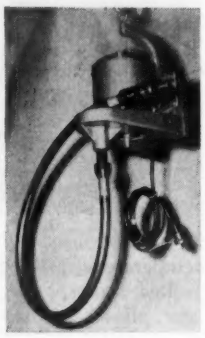

## ROTARY TABLES
### for horizontal and vertical uses



Rapid engaging and disengaging of worm, totally enclosed base, and adjustment to compensate for wear are features of four models added to the Troyke rotary table line. The 9, 12, and 15-in. sizes have precision ground turntable, base, and foot; 1-min graduated, easy-to-read dials; and an accuracy of 60 sec or less through 360 degrees of rotation. They can be used in both horizontal and vertical positions. Dividing attachments with index plates are available. Made by **Troyke Mfg. Co.**, 11294 Orchard St., Cincinnati 41, Ohio.

▲ For more details circle NED-145 M9 on enclosed inquiry slip ▲

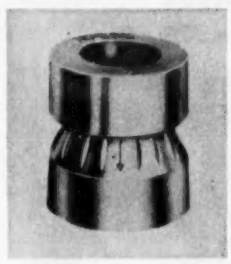
## FLEXIBLE SHAFT MACHINE
### speeds are 1000, 1725, 3500 rpm



Swivel hook on Model VJ-38 flexible shaft machine allows it to be suspended above operator's bench. Unit has a 5-ft long, 3/8-in. flexible shaft with neoprene casing. Handpiece has an arbor for attaching grinding wheels, wire brushes, chucks for drilling, sanding discs, and buffers. The 1/4-hp motor will deliver 1725 and 3500 rpm speeds and, by reversing the pulleys, 1000 rpm as well. Made by **Stow Mfg. Co.**, 26 Shear St., Binghamton, N. Y.

▲ For more details circle NED-146 M9 on enclosed inquiry slip ▲

## MASONRY ANCHOR
### for 1/4 to 1-in. diameter bolts



Threaded heavy duty Multi-Calk masonry anchor is used where it is desirable to have the bolt head out of the hole. Anchor is made in sizes for 1/4 to 1-in. diameter bolts. It consists of a lead sleeve which is caulked down over a hard metal cone, filling the drilled hole and irregularities in the wall with lead. A threaded pilot keeps the lead from filling the bolt hole. Anchor with retaining rings for greater holding power is also available. Made by **Rawlplug Co.**, 240 Petersville Rd., New Rochelle, N. Y.

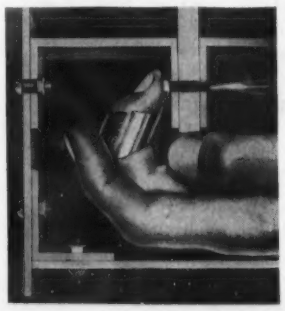
▲ For more details circle NED-147 M9 on enclosed inquiry slip ▲

## MICROSCOPE SLIDE LABELS
### various sizes, thicknesses offered

Packaged in a self-contained dispenser box, Time microscope slide labels will accept typewriter, stamp, pencil, pen, or ballpoint impressions. Pulling on the box tab causes the pressure-sensitive label to pop up from the paper backing for direct application. Plain and imprinted types are offered in tissue and standard thicknesses in 3/8 x 7/8-in. and 7/8 x 7/8-in. sizes. Made by **Professional Tape Co.**, 355 Burlington Rd., Riverside, Ill.

▲ For more details circle NED-148 M9 on enclosed inquiry slip ▲

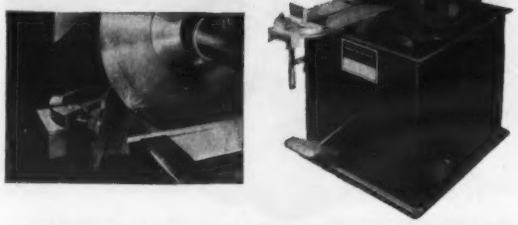
## FINGER-TIP WRENCHES
### aid nut and bolt assembly



Supplied in the most popular hex head nut sizes, Touch 'n Hold finger-tip wrenches facilitate nut and bolt assembly in close quarters. User can reach into snug, narrow, or hidden corners to hold a nut or a bolt head in position for final fastener installation. Wrenches are worn on the end of the finger and adjust for different size fingers. Made by **Beaver Tool Co.**, Box 256, Huntington Station, N. Y.

▲ For more details circle NED-149 M9 on enclosed inquiry slip ▲


**NEW! PROMACUT multi-purpose cut-off saw**



**CUTS *without* CLAMPING *or* COOLANT**

**Cuts carbon, stainless and alloy steels in seconds**

Just place stock on table; Promacut whizzes through 2" x 2" x 1/2" mild steel angle in only 1 second; 6/10 second for 3/4" round. Smooth, almost burr-free cuts with comparable speed in many shapes and sizes: up to 12" channel, 6" I-Beams, 4" angles. Does any job you're now doing with hacksaw, bandsaw, cut-off machine of equal capacity.

***WRITE FOR DETAILS—Ask for Mobile Demonstration in Your Plant***

**PMI** *nc.* **PRODUCTION MACHINERY, INC.**
P. O. Box 322, Dept. 8
Oakton Station, Des Plaines, Illinois
BALTIMORE • CHICAGO
LOS ANGELES • HOUSTON

**DEALERS: Some territories still open — write on letterhead**

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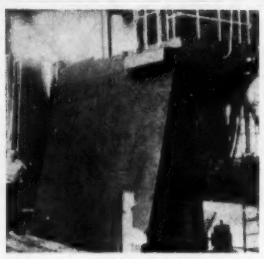
# PROTECTED

New Line CURTAINS and COVERS! for



Fiberglass curtain on boring bar Allis-Chalmers, Milwaukee.

OUTDOOR MACHY.
LAB. WINDOWS
LOADING DOCKS
WELDER'S CURTAINS
MISSILE COVERS
LUMBER, etc.

This pliable protection against heat, cold, drafts, glare, wind, etc., is quickly fabricated to your needs. Ask for new bulletin GW-400. A&A Mfg. Company Inc., 712 S. 12th St., Milwaukee 4, Wis.

**ALL SHAPES AND CONTOURS**
**BOOTS . . . SLEEVES . . . WAY PROTECTORS**

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**HYDRAULIC**

# REMOTE CONTROL

**SYSTEMS**

Completely self-contained . . . single tube . . . remote control eliminates use of compensators. Rugged and reliable . . . used in engine, machine tool and many other factory applications . . . wherever positive, accurate, instant duplication of movement is needed . . . no "sponginess."

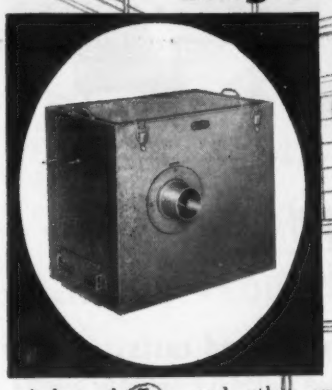
**Sperry CONTROLS**
HYDRAULIC REMOTE CONTROLS

Representatives in Principal Cities

**SPERRY PRODUCTS, INC. • 1712 SHELTER ROCK RD. • DANBURY, CONN.**

▲ For more details circle NED-152 M9 on enclosed inquiry slip ▲

## DUSTKOP "520"
**designed to collect dust from single machines**



portable — easily installed

DUSTKOP STOPS DUST

Self-contained Dustkop models, like the "520," are practical and effective in collecting dust from single machines. They're designed specifically for service with surface grinders, tool and cutter grinders, offhand grinders, buffers and other small wheel equipment. These units are also easy to install — are actually portable — and very economical to operate.

Write for illustrated literature . . . 46 models to choose from!

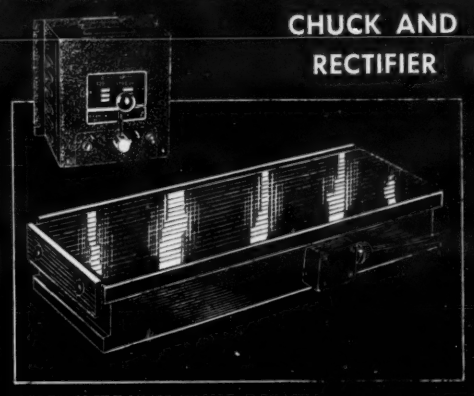
NEW DUSTKOP AUTO SHAKER shakes filters AUTOMATICALLY

**AGET manufacturing company** ask for details
1396 E. Church Street, Adrian, Michigan

▲ For more details circle NED-153 M9 on enclosed inquiry slip ▲



## MAGNA-LOCK combination CHUCK AND RECTIFIER



On bench work, on surface grinders, jobs go faster. Light weight, easy to handle. Simply plug into A.C. line. Seven sizes from 5" x 10". Write Dept. NH129.

Hanchett MAGNA-LOCK CORPORATION
BIG RAPIDS, MICHIGAN, U.S.A.

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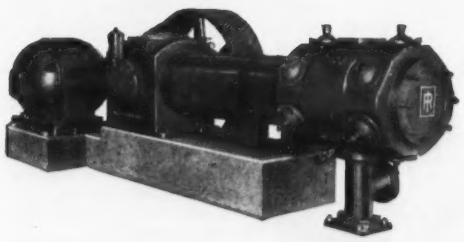
## Non-Lubricated compressors

## ESH-NL *for OIL-FREE air*



**New electric-driven compressors for applications where oil cannot be allowed to contact the air or gas being handled. Special cylinders and valves designed for continuous operation without lubrication, with minimum maintenance. Sizes from 20 to 150 hp. Also vertical units, known as ESV.**

**Ingersoll-Rand**
1-870 11 Broadway, New York 4, N. Y.

OVER 1000 COMPRESSOR TYPES AND SIZES . . . ½ TO 7500 HP

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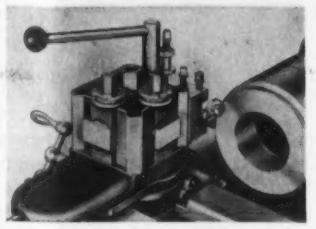
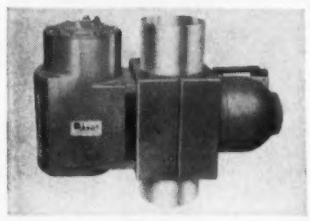
## LATHE TOOL HOLDER
**cutting point set within 0.0001 in.**



Considerable saving of setup time can be realized with use of the Swiss Boni Master Multi-Tool Holder, a quick - change, adjustable tool holder for lathes. Cutting point of tool bit can be set to within 0.0001 in., assuring high repeat precision. Suitable for large production, small runs, or individual work, the tool takes heavy as well as light cuts. Five sizes cover lathes from 1 to 35 hp. Distributed by **Karl A. Neise**, 404 Fourth Ave., New York 16, N. Y.

▲ For more details circle NED-156 M9 on enclosed inquiry slip ▲

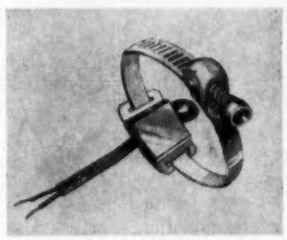
## DENSITY MEASURING GAGES
**monitor specific gravity in pipes**



Point source of radioactive material mounted in a safety shielded holder on one side of a pipe and an Ohmart measuring cell on the other side are utilized by Model PGV and PG density measuring gages. They automatically measure the specific gravity or per cent solids of liquids flowing through up to 8 in. diameter process lines. Gages do not contact the material being measured. Model PG uses electrical zero suppression and Model PGV uses an Ohmart compensating cell for longer term stability. Spans as narrow as 0.15 specific gravity unit are measured with a precision as narrow as 0.0015 unit. Made by **Ohmart Corp.**, 2236 Bogen St., Cincinnati 22, Ohio.

▲ For more details circle NED-157 M9 on enclosed inquiry slip ▲

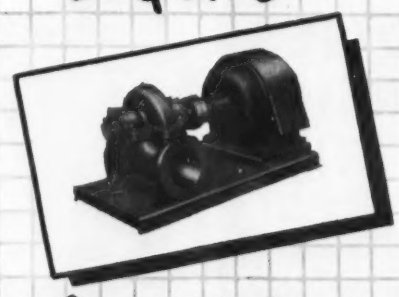
## SURFACE THERMOMETER
**strapped to outside of pipe**



RdF Strapon self-contained flexible surface thermometer operates from −100 to 500° F and intermittently from −300 to 575° F. The moisture resistant unit consists of a 100-ohm (at 70° F) CP nickel element that is encapsulated in silicone rubber and stainless steel. Thermometer is strapped to the exterior of a pipe for measuring without interrupting flow or cutting holes. It can also be immersed in fluids or molded into units for measuring inside temperatures. Made by **Arthur C. Ruge Associates, Inc.**, Hudson, N. H.

▲ For more details circle NED-158 M9 on enclosed inquiry slip ▲


*You specify the LIQUID*



*and Ingersoll-Rand will specify the PUMP*

10-974

From the world's most *complete line* of centrifugal pumps, I-R engineers can select the one that meets your exact requirements to *best advantage.*

**Ingersoll-Rand**
11 Broadway, New York 14, N. Y.

PUMPS • COMPRESSORS • DIESEL ENGINES • AIR & ELECTRIC TOOLS
TURBO BLOWERS • CONDENSERS

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## INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

For Complete Information Phone BAker 5-8201 or write:

**PHILLIPS PROCESS CO. INC.**
192 MILL STREET
ROCHESTER 14, N. Y.

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## OHMITE®
THE QUALITY LINE OF INDUSTRY-PREFERRED COMPONENTS

**11 Models**
**12½ to 1000 Watts**
**The most extensive selection available to industry**

**VITREOUS ENAMELED RHEOSTATS**

Ohmite rheostats feature smoothly gliding metal-graphite brush, all-ceramic construction, insulated shaft and mounting, and windings permanently locked in place by vitreous enamel. Single or tandem assemblies. Many special features to solve difficult control problems. Also available to meet MIL-R-22A requirements. Write on company letterhead for Catalog 58.

**OHMITE Manufacturing Co.**
3620 Howard St., Skokie, Illinois

RESISTORS RELAYS TAP SWITCHES
RHEOSTATS TANTALUM CAPACITORS
R. F. CHOKES VARIABLE TRANSFORMERS DIODES

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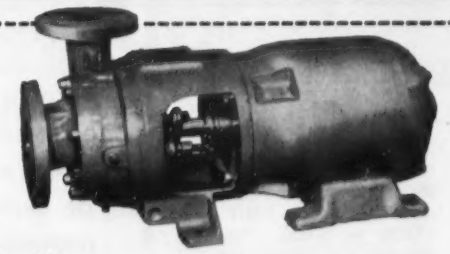

*full capacity pumping power*

There's maximum performance with space-saving compactness in the design of Ingersoll-Rand's Motorpump. Capacities from 5 to 2800 gpm . . . heads to 650 feet. Easy installation. Precision manufacturing means dependable, smooth operation.

For your liquid-moving problems . . . Send for I-R's catalog on Motorpumps.

**Ingersoll-Rand**
11 Broadway, New York 4, N.Y.

9-498

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## Replace high priced leather with Edmont coated work gloves

Coated gloves often outwear leather 3 to 1

Edmont JOB-FITTED GLOVES

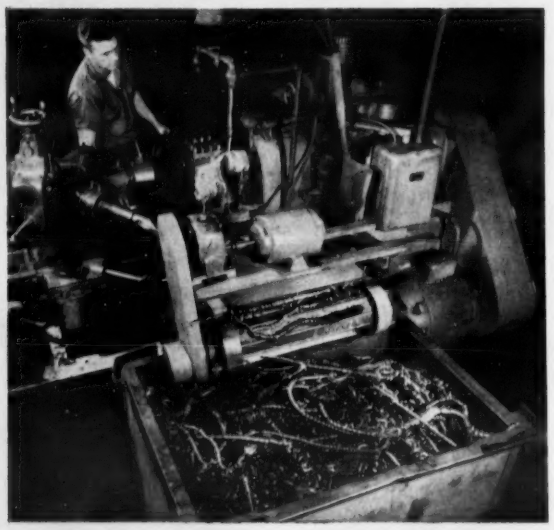
Leather work glove prices have gone up, up, up in the past year. As a result, many companies are taking their first careful look at other types of gloves, and are turning to modern Edmont *coated* gloves. Their special plastic, neoprene and natural rubber coatings outwear ordinary leather, yet cost much less. Compared with leather and cotton, Edmont gloves provide savings from 40% to 80% — and give more protection at the same time.

**Free Test Offer to Listed Firms:** Describe your operation. From more than 50 types we will recommend the most suitable glove and supply samples for comparison-test on the job.

**Edmont Manufacturing Company**
1240 Walnut Street, Coshocton, Ohio.
*In Canada write MSA, Toronto*

▲ For more details circle **NED-163 M9** on enclosed inquiry slip ▲

# NO DOWN-TIME FOR SCRAP REMOVAL!



## with MAY-FRAN CHIP-TOTE

PROVIDES CONTINUOUS REMOVAL OF CHIPS TURNINGS AND BORINGS FROM MOST MACHINE TOOLS!

Here is another installation of the famous CHIP-TOTE in action. This machine tool attachment can pay for itself in 6 months or less . . . it will increase production . . . reduce costs. Scrap is channeled clear of the machine for discharge into tote boxes or onto carry-off conveyors. Available in complete range of sizes.

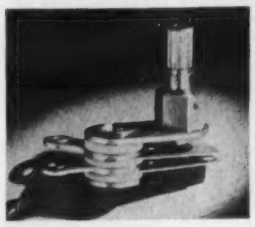
MAY-FRAN ENGINEERING, INC.
1711 Clarkstone Rd.
Cleveland 12, Ohio

*Write today for CATALOG MF-640*

8715-MF

▲ For more details circle **NED-164 M9** on enclosed inquiry slip ▲

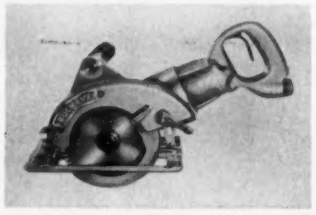
## BIMETAL THERMOSTAT for overheat control, timing



Relatively inexpensive Nor-Stat Type B thermostat for use on appliances and other apparatus as an overheat, timing, or controlling device provides space economy. A bimetal breaks a circuit when heated and recloses contacts as it cools. Blade and bimetal can be specified to give any desired performance. Both screw and quick disconnect terminals are standard. Unit is rated 5½ amp on 110-120-v ac. Made by **Norwalk Thermostat Co.**, 52 Woodlawn Ave., Norwalk, Ohio.

▲ For more details circle **NED-165 M9** on enclosed inquiry slip ▲

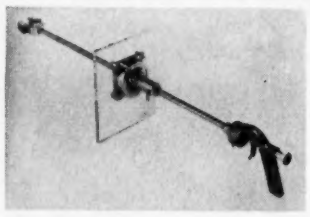
## AIR-POWERED SAW cuts 1½ in. deep with 6½-in. blade



Powered by a Buckeye X-4 air motor, this ⅝-in. arbor pneumatic hand saw is offered in two models. Model 74Z-147A shown operates at 4800 rpm to cut wood, plastic, and nonferrous metals. The 6000-rpm Model 74Z-145A, with abrasive-type cutoff wheel will cut masonry and certain ferrous metals. Maximum depth of cut on both models is 1½ in. with a 6½-in. diameter blade. Tilt table allows angle cuts from 0 to 45 degrees, and handle is reversible left or right for operational visibility. Saw requires 90 to 100-psi air pressure. Base price for both models, without blades, is $425. Made by **Buckeye Tools Corp.**, 5003 Springboro Pike, Dayton 1, Ohio.

▲ For more details circle **NED-166 M9** on enclosed inquiry slip ▲

## PISTOL GRIP MANIPULATOR handles items in various atmospheres



Positive acting parallel jaws of the RYE M-1 manipulator are controlled by a pistol grip handle. Unit facilitates positioning and clamping of work for welding or other tasks in vacuum or hazardous atmospheres in a pressure range to $10^{-6}$ mm Hg. The 3-ft stainless steel shaft can be moved in and out of the chamber, rotated, or moved through a 90-degree cone of motion. Standard unit is furnished with machined attachment plate with an O-ring for positive seal, or is available mounted on blank-off plates or other configurations. Made by **Scientific Engineering Laboratories, Inc.**, 1510 Sixth St., Berkeley 10, Calif.

▲ For more details circle **NED-167 M9** on enclosed inquiry slip ▲

## *Here's* BIG HELP IN TERMINAL WIRING!

The correct wire to correct terminal every time!

*The New* JONES FANNING STRIP

Connections are made through Fanning Strip on bench or anywhere apart from barrier strip, and quickly slipped into assembly.

**Designed for use with Jones Barrier Terminal Strips Nos. 141 and 142, for 1 to 20 terminals.**

9-141 Barrier Strip

Simplifies and facilitates soldering. Insures positive correct connections. Saves time. Ideal for harness or cable assembly. Strong construction: Brass terminals, cadmium plated. Heavy bakelite mounting.

9-161 Fanning Strip. Pat. applied for.

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION, CINCH MANUFACTURING COMPANY, CHICAGO 24, ILLINOIS, DIVISION OF UNITED-CARR FASTENER CORP.

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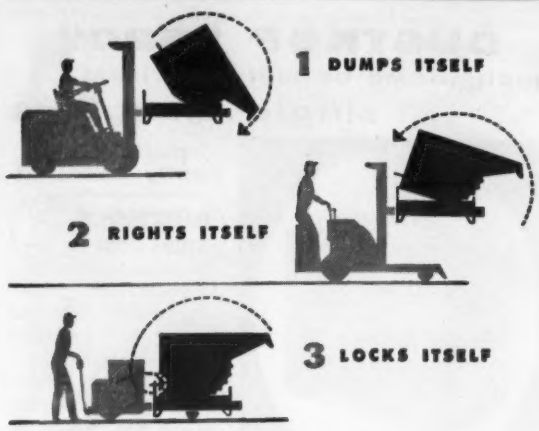


## Cuts handling time...and costs...50%

Here's the fastest, lowest cost method ever devised for handling hot or cold, wet or dry bulk materials . . . scrap metal, hot forgings, cinders, soybean meal, etc. Fits any standard lift truck. One man picks up loaded Hopper with truck, transports it to destination, and flips the latch. The Hopper automatically dumps its load, rights itself, locks itself. Cuts costs 50%. Made of ⅜" steel plate with continuous arc-welded seams. Also in stainless steel or galvanized. Five sizes, ½ to 2 cubic yards. Standard models can be shipped from stock immediately. Literature and other information available on request. ROURA IRON WORKS, INC., 1415 Woodland Ave., Detroit 11, Mich.

ROURA *Self-Dumping* HOPPER

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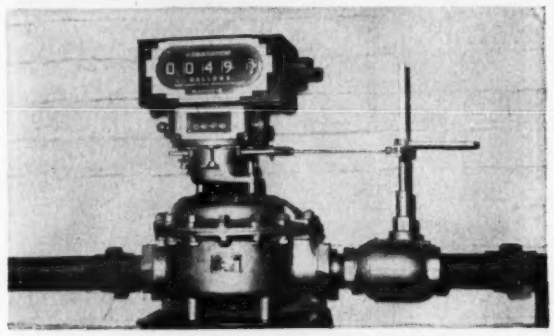
## *It Figures!*



## METERING LIQUIDS SAVES YOU MONEY

If you batch or blend liquids the automatic shut-off type Rockwell ER Industrial meter (pictured above) gives positive quantity control to stabilize the quality of your end product. You'll eliminate the need for costly weigh tanks and laborious handling—also gain the advantage of a closed piping system.

Throughout your plant Rockwell meters spell advantages wherever liquids are piped or used—for inventory and department controls; for tax records, etc. Our bulletins tell all. Write Rockwell Manufacturing Company, Pittsburgh 8, Pa.

LIQUID METERS
another fine product by
ROCKWELL

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## Whatever You Need in WIRE SHAPES and FORMS ...ask SOMMER!

Ask Sommer first for whatever you need in precision wire parts or products. We have complete equipment to handle your job from start to finish.

We offer finest facilities for automatic fabrication, flattening and punching, threading, spot and butt welding.

Finishes include baked enamel, cadmium, brite zinc, brite nickel, nickel chrome and mill finishes —in both barrel and fully automatic equipment.

We make our own tools, saving time and money for you.

Tell us your needs. Send sample, blueprint or drawing. We will submit recommendations and quotations promptly.

**SOMMER**
METALCRAFT CORPORATION
200 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

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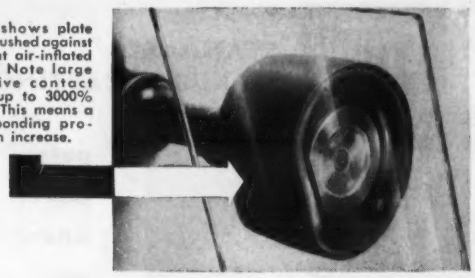

Photo shows plate glass pushed against resilient air-inflated wheel. Note large abrasive contact area—up to 3000% more! This means a corresponding production increase.

## ...how to INCREASE BUFFING, POLISHING PRODUCTION 3000%

• You can boost your buffing and polishing output up to 3000% on flat work . . . and 600 to 700% on contours . . . by using this resilient air-inflated wheel. Many other advantages such as — *no chatter or bounce . . . eliminates under-cuts . . . produces a straight pattern similar to a hand finish.* For use on portable tools or bench-stands—wherever ordinary polishing wheels are used. Send NOW for free literature and name of distributor nearest you.

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CHICAGO—Tuxedo 9-4300
CANADIAN DISTRIBUTOR—Wm. Orlick, Ltd., Hamilton, Ontario

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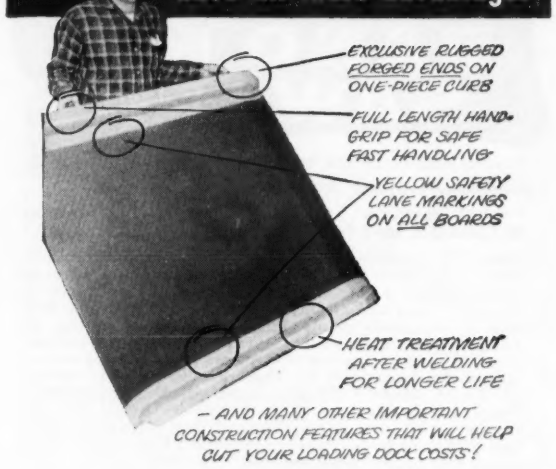
Only B&P MAGNESIUM DOCKBOARDS have all these advantages




Compare the B & P Dockboard features before you place your next order. Write today for the fact-packed B & P Dockboard folder!

**BROOKS & PERKINS, Inc.**
1928 WEST FORT STREET • DETROIT 16, MICHIGAN

AMERICA'S LARGEST MANUFACTURER OF MAGNESIUM ASSEMBLIES

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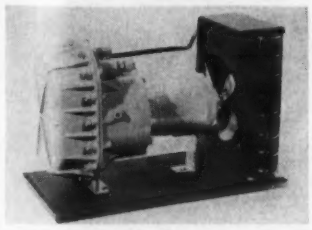
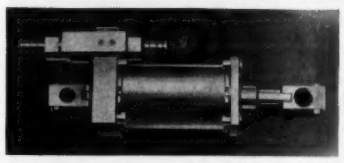
## DC REFRIGERATING UNIT for battery operated mobile use



Mobile refrigeration in boats, trailers, buses, and other vehicles is made feasible by the Magna-Kold direct-current compressor refrigeration unit. Strong, permanent disc magnets, revolving in absolute synchronism, transmit power from a dc motor to the compressor crankshaft through the hermetically sealed wall of the compressor. Unit has a die-cast aluminum shell and frame. Motor is located outside the compressor shell to keep its heat out of the system. Available are a 20-lb, 1/8 hp and a 1/15-hp, 17-lb unit, both of which use Refrigerant 12. The 1/15-hp unit is shown. Made by **Magna-Kold Co.**, Box 2385, Los Angeles 28, Calif.

▲ For more details circle NED-175 M9 on enclosed inquiry slip ▲

## SANITARY PUMP dispenses 0 to 16 oz per stroke



Filamatic sanitary type filling pump may be attached to any rotating mechanism operating at speeds up to 80 rpm. The easily cleaned, stainless steel reciprocating unit accurately dispenses measured volumes adjustable from 0 to 16 oz per stroke. An optional graduated micrometer control mechanism adjusts the volume dispensed per stroke from zero to maximum. Accuracy per fill is within 1 per cent. Made by **National Instrument Co.**, 2701 Rockwood Ave., Baltimore 15, Md.

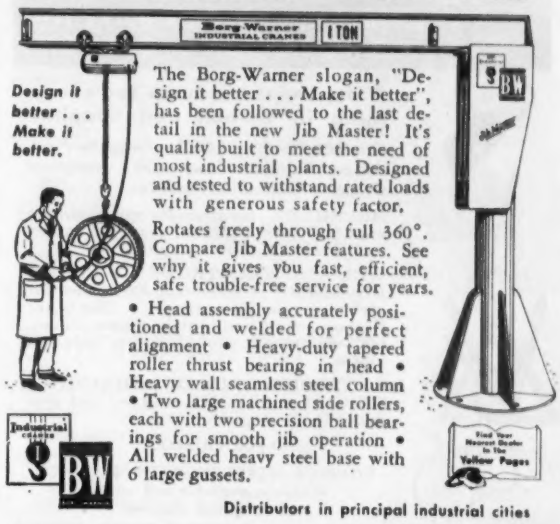
▲ For more details circle NED-176 M9 on enclosed inquiry slip ▲

## HAND PUMP OILER in 3/4, 1, 1 1/2, and 2-pt capacities

Either rigid-angle or steel flexible spouts are available in series of four Handi-Grip pump oilers made of gray enameled steel. Designed for general industrial use, oilers have positive pump mechanism for close control when oiling in hard-to-reach machinery areas. They will deliver a full stream or one drop, depending upon finger pressure. Broad base minimizes tilting. Oilers are offered in 3/4, 1, 1 1/2, and 2-pt capacities. Made by **Eagle Mfg. Co.**, 1058 Charles St., Wellsburg, W. Va.

▲ For more details circle NED-177 M9 on enclosed inquiry slip ▲


# NEW N PBM Jib Master by Borg-Warner® INDUSTRIAL CRANES




The Borg-Warner slogan, "Design it better . . . Make it better", has been followed to the last detail in the new Jib Master! It's quality built to meet the need of most industrial plants. Designed and tested to withstand rated loads with generous safety factor.

Rotates freely through full 360°. Compare Jib Master features. See why it gives you fast, efficient, safe trouble-free service for years.

• Head assembly accurately positioned and welded for perfect alignment • Heavy-duty tapered roller thrust bearing in head • Heavy wall seamless steel column • Two large machined side rollers, each with two precision ball bearings for smooth jib operation • All welded heavy steel base with 6 large gussets.

Distributors in principal industrial cities

**Borg-Warner® INDUSTRIAL CRANES**
1584 S. PAULINA STREET, CHICAGO 8, ILLINOIS
Export Sales: Borg-Warner International, 36 South Wabash Ave., Chicago 3, Illinois

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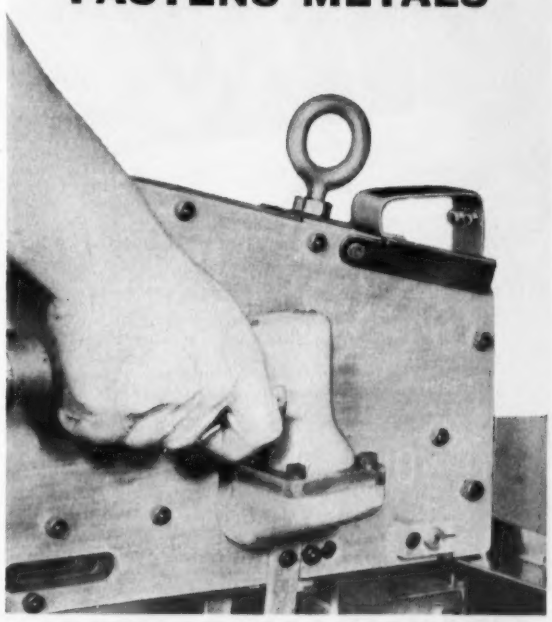
# NEW!

## PORTABLE STAPLER FASTENS METALS



BOSTITCH P10 AIR-DRIVEN STAPLING PLIER

This powerful, portable air-driven stapler goes where the work is. It fastens hard-to-penetrate materials on an assembly line basis.

There's no pre-drilling or other preparation. The operator simply positions the P10 on the work, and presses the thumb-tip trigger on the handle. It's possible to drive as many as 50 high-tensile staples a minute on some jobs. No special operator training is required.

The P10 fastens a maximum total combined thickness of approximately .080" steel, depending on hardness. Fastens other materials up to 1/4" thickness, depending on their nature. Fastens non-brittle materials like-to-like or in combination securely and permanently at surprisingly low cost.

**FREE INFORMATION. NO OBLIGATION.** Let us send you full technical data on the Bostitch P10-AD. Simply circle our number on the reader service card in this publication. For immediate answers to specific questions on your application, look up "Bostitch" in your phone book or write to us direct at 692 Briggs Drive, East Greenwich, Rhode Island.

*Fasten it better and faster with*

BOSTITCH
STAPLERS AND STAPLES

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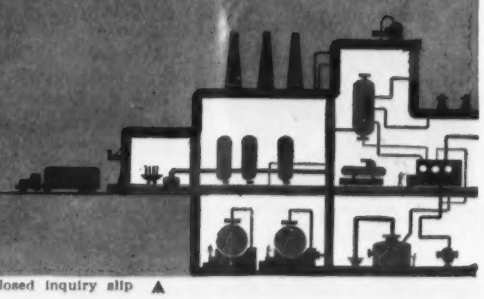
# THE 1960 NATIONAL PLANT MAINTENANCE & ENGINEERING SHOW

CONVENTION HALL, PHILADELPHIA — DON'T MISS THE CONFERENCE
JANUARY 25-28, 1960

Four idea days that will stimulate your thinking and freshen your approach to the job of increasing plant efficiency. Almost 400 leading manufacturers will show you machines, equipment, supplies and services covering every aspect of plant and maintenance engineering. All under one roof, at one time! See and compare, discuss your problems with experts!

At the Plant Maintenance & Engineering Conference you'll hear top experts discuss your problems. For show registration tickets and conference information, write to:

*Show Management, Clapp & Poliak, Inc., 341 Madison Avenue, New York 17, N. Y., MUrray Hill 4-3432.*



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if it's CARBON or GRAPHITE!

**A dependable source for everything in Carbon and Graphite**

***Graphite Cores and Chills—Graphite Powder and Particles of any mesh... complete Graphite Fabrication Facilities.***

BRUSHES... for all motor and generator applications... carbon, graphite, copper leaf, gauze and metal-graphite.

WELDING ELECTRODES, WELDER BRUSHES... Keen-Cut Electrodes for carbon arc-air jet cutting... Keen-Arc Carbons, cored and heavily copper coated, for twin-arc torches... paste, rods and plates.

EXTRUSIONS, MOLDED SHAPES OR SPECIAL CARBONS designed and produced to your specifications.

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**BECKER BROTHERS CARBON CO.**

3454 South Laramie Ave. • Cicero 50, Illinois

*Telephone: BI 2-1260 • Chicago*

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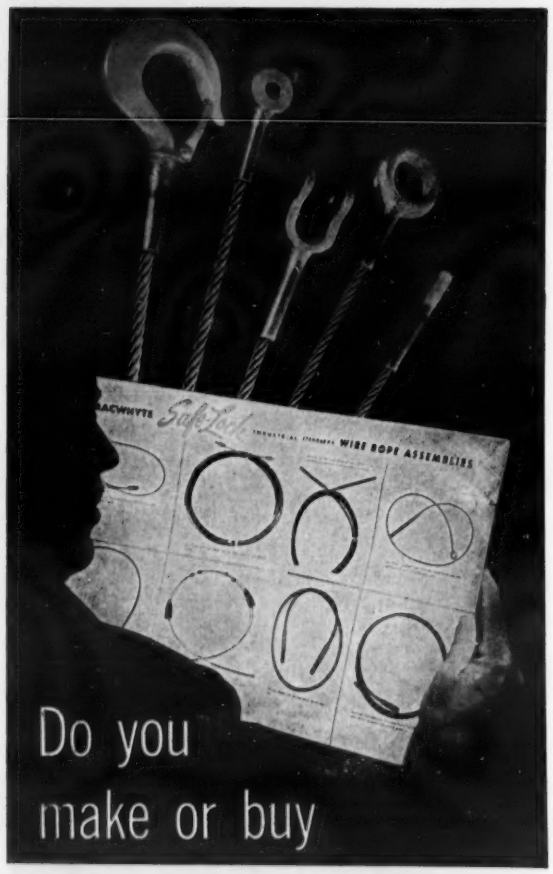


# MECHANICAL CONTROL CABLE ASSEMBLIES?

Are you getting the right wire cord or wire rope plus the best fittings that will save time, labor, cost, and improve appearance on your product?

Whether your product is a hoist, a tool, a tractor, a boat, an overhead door, or window sash, there are a 1001 types, sizes, and grades of wire cord, wire rope, and fittings available to you — *and Macwhyte has them all!*

So whether you make or buy — let us give you the benefit of our suggestions. You can rely on our recommendations, for we are wire-rope manufacturing specialists.

*Catalog 5601 available on request.*

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**MACWHYTE**
*Wire Rope* **COMPANY**

2906 Fourteenth Avenue, Kenosha, Wisconsin

*WIRE ROPE WITH A PURPOSE... TO SERVE YOU BETTER!*

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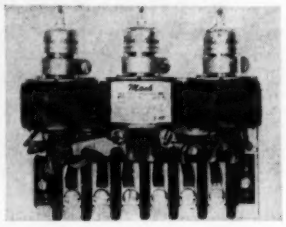
## PORTABLE MIXER
### can be set to four mixing angles

Any of four angular positions for mixing anything from coarse aggregate concrete to thin slurries can be set on the portable Model 60C Mixal with a touch of the toe. Two mixing paddles are furnished, each designed to produce maximum horizontal and vertical circulation. Any standard 5-gal pail will serve as an extra mixing drum. With a ¼-hp motor, mixer weighs only 39 lb. Complete mixer sells for $69.95 and is made by **KOL, Inc.**, 2323 Ellis Ave., St. Paul 14, Minn.

▲ For more details circle NED-182 M9 on enclosed inquiry slip ▲

## MERCURY RELAYS
### double and triple-pole models



Teflon bearing surfaces eliminate sticking and assure positive, silent response in double and triple - pole Phaertltron mercury relays. Units have hermetically glass-sealed plunger units, heavy tungsten contacts, and mercury-to-mercury make and break. They are dust and moistureproof, and load terminals are readily accessible. Contact ratings are 35 and 60 amp at 115 v ac. Made by **Mack Electric Devices, Inc.**, Box 98, Wyncote, Pa.

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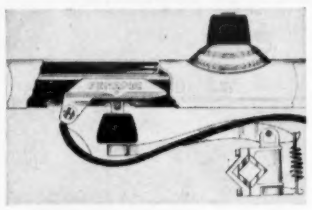
## TROLLEY WIRE COVERING
### neoprene duct is clipped to wire



Hazard of exposed crane trolley wires is eliminated with installation of Penrose safety trolley system, consisting of 10-ft lengths of neoprene duct which are clipped to the wire. The entire trolley wire is covered by the flexible duct which has a self-closing slot through which trolley shoe passes. Current is carried by insulated jumpers. Contact shoe is supported on an insulator on the end of the arm assembly. Straight or curved runs can be used without any hazards. Duct can be specified for conductors carrying 100-amp loads or more. Made by **Northbrook Products, Inc.**, Industrial Div., 230 E. Ohio St., Chicago 11, Ill.

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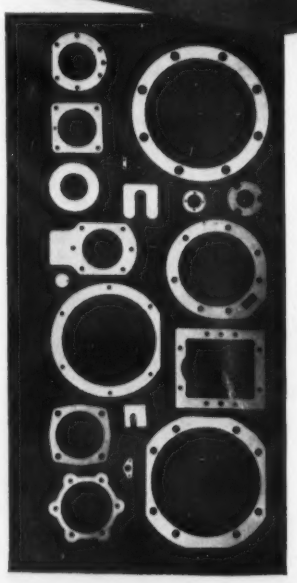
**LOOKING FOR SAVINGS on GASKETS, SHIMS, WASHERS?**



Over more than 50 years, Chicago-Wilcox has accumulated a wide variety of dies which enable us to supply many of your gasket, shim and washer needs **without a die charge.** Whether you need just a few items or large quantities, this can save you money and speed delivery. Available in metallic, nonmetallic and plastics to meet your production requirements.

**Write for Catalog and prices.**

**Ask about WIL-PAK PLASTIC SHIM STOCK that identifies thickness both by color and gauge number. Write for Bulletin No. 570.**

**CHICAGO-WILCOX MFG. CO.**
7713 South Avalon Avenue
Chicago 19, Illinois

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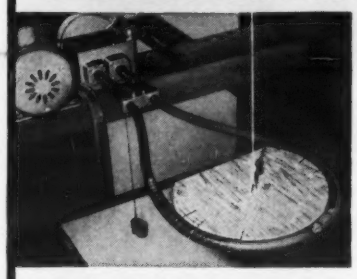
**STOW STANDARD FLEXIBLE SHAFTING**



**puts power where you want it!**

Flexible shafting permits primary power transmission between shafts which are not collinear, or which have relative motion, allowing greater freedom of design in locating the drive and driven components. Stow standard power drive flexible shafts provide an ideal means of transmitting power motion over a curved path, reducing alignment and maintenance problems in power take-off and remote control situations. This eliminates complicated and expensive arrangements, involving the use of telescopic joints, and the danger of exposed moving parts.

If flexible shafting is considered in the early stages of design, many difficult situations can be simplified. To help you with your PTO and remote control problems, Stow offers the services of its specialized engineering staff. For simple, low-cost, efficient, easy to install power drive, investigate Stow standard flexible shafting. For tables of specifications and detailed instructions on how to order, write for Bulletin 5710.

OTHER STOW FLEXIBLE SHAFTS:

| | |
|---|---|
| Power Drives and Remote Control | Bul. 570 |
| Flexible Shaft Machines | Cat. 59 |
| Lightweight Flexible Tool Shafts | Cat. 59 |
| High Speed Power Drive Shafts | Bul. 590 |

**STOW MANUFACTURING CO.**
26 Shear Street • Binghamton, N. Y.

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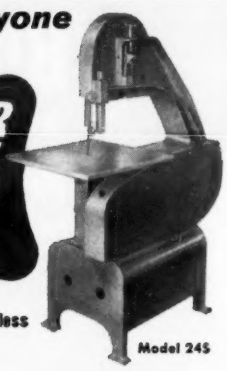
***Favorite with Everyone in the Shop!***

**LOCKFORMER BAND SAW**



**Pays for itself on the first few jobs**
**Cuts almost everything, including stainless**
**Compact, Rugged, Fast, for Continuous Heavy-Duty Cutting**

Model 24S

One of the most versatile pieces of equipment you can buy! The Lockformer Band Saw cuts forgings, bars, stacked bronze, brass, copper, aluminum and steel sheets, plates, stainless, wood and plastics. Adjustable 100, 600 and 3000 fpm. blade speeds assure high speed, accurate cutting on any job. V-Belt drive with sheaves eliminates power-robbing speed reducers... equals or surpasses production of costlier saws with ratings to 1½ hp. Three-wheel Model 24S has full 24" throat; Model 14SM has two-wheel design with 13½" throat for smaller jobs. Both models are simple, rugged, compact, with friction-free, slip-proof final chain drive. Both have Neoprene seals, life-time lubrication. Cemented carbide guides give perfect blade control.

ALL THIS FOR ONLY $695.00 (MODEL 24S) OR $445.00 (MODEL 14SM)*

**Prices subject to change without notice.*

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manufactured by

**THE LOCKFORMER CO.**
4615 West Roosevelt Rd., Dept. N, Chicago 50, Ill.
*In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ontario*

LOCKFORMER
TIME SAVING, MONEY MAKING EQUIPMENT

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H-P-M's servo-controlled C-Press offers unlimited control of pressure, speed of ram, distance of travel — all through the miracle of servo-feedback hydraulic power. Manually controlled, it is ideally suited for laboratory experimentation or manual press jobs where the operator must "feel" the force being applied. Put it to work anywhere; you'll find it amazingly versatile, useful in a hundred ways. Models from 5 to 15-ton capacity. Automatic C-Presses and index tables with interlocked control also available for high speed production and low cost automation. Send today for complete catalog information. Ask for Bulletins 58-CPA and 58-CPM

HPM

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**THE HYDRAULIC PRESS MFG. COMPANY**
A Division of Koehring Company, Mount Gilead, Ohio, U.S.A.

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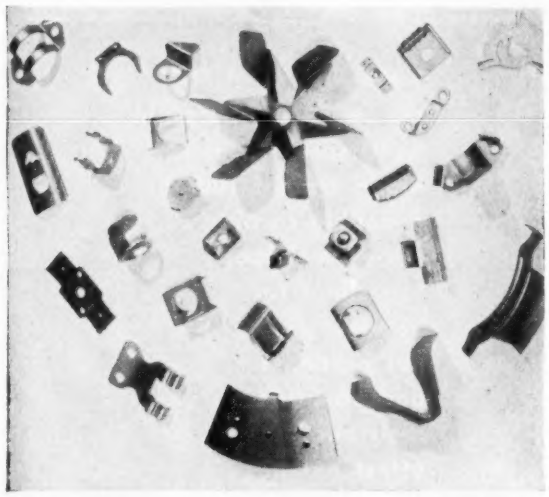
## Power Springs

A.S.C. Divisions are unusually well equipped for the manufacture of flat spiral and motor springs. Made from our own cold-rolled specialty steels or other suitable metal, they can be furnished in sizes and methods of end attachment to meet your requirements. Write for handy pamphlet "Spring Design and Selection—in brief."

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

5826

▲ For more details circle **NED-189 M9** on enclosed inquiry slip ▲



## Small Stampings

Simple or intricate shapes punched, bent, crimped from all types of metals, including spring steel. Properly heat-treated to hold tolerances and working range. Our toolmakers are skilled in designing economical production set-ups for small or large orders. Send sample or specifications for quotation.

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

5825

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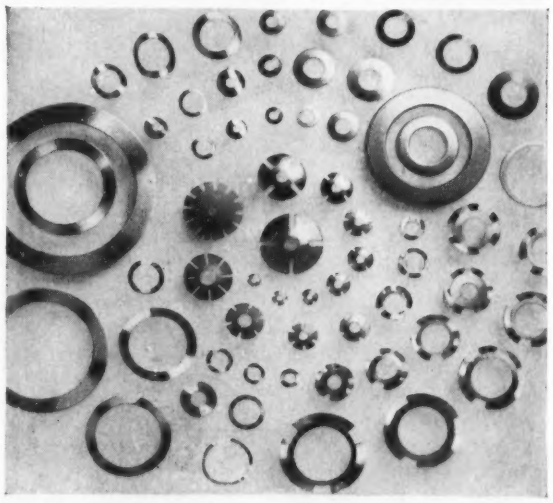


## Spring Washers

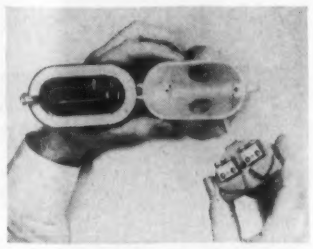
Thousands of tools available for production of your washers—slotted, finger, star, cupped, wavy, etc. Also belleville washers for use as springs in limited space. Save tool charges. Send for list of tool sizes ready to meet your requirements.

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

5830

▲ For more details circle **NED-191 M9** on enclosed inquiry slip ▲

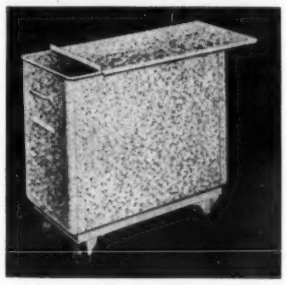
## THERMOCOUPLE HEAD
### steel cap flipped open or shut



Wires are guarded against corrosion, abrasion, and mechanical damage by the moisture and heat resistant gasket shield and the positive catch of this thermocouple head assembly's flip-top cap. The hinged carbon or stainless steel cap opens without tools to expose the block. Cast iron base is painted with a high temperature aluminum paint. The ceramic block takes wires from 8 gage down to the smallest sizes and, with a simple modification, it can be used with other types of standard thermocouple heads. Flip-top head is available in all usual conduit and protecting tube thread sizes. Made by **Pyrometer Co. of America**, Penndel, Pa.

▲ For more details circle **NED-192 M9** on enclosed inquiry slip ▲

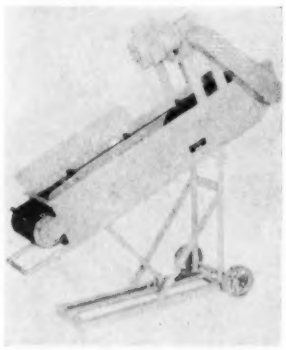
## STORAGE BINS
### six sizes have cove corners



Various products can be stored in these galvanized sheet steel ingredient bins, made with sliding or hinged covers. Cove corners in all six sizes facilitate cleaning. They can be used next to benches, at machines, or in storerooms. A large-diameter rod around the top, and 3-in. diameter steel or rubber wheel casters are incorporated. Made by **Wilder Mfg. Co.**, Mechanic Street & Erie R. R., Port Jervis, N. Y.

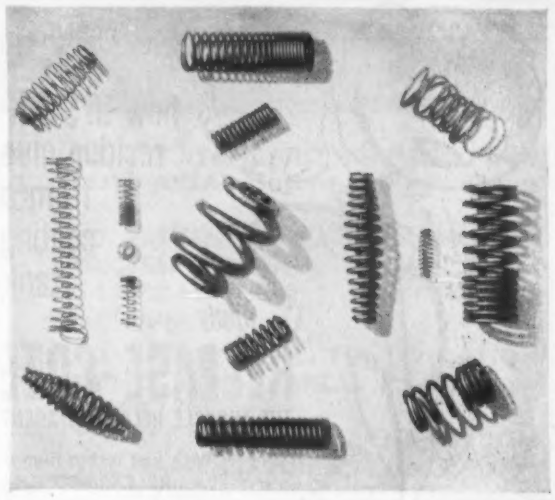
▲ For more details circle **NED-193 M9** on enclosed inquiry slip ▲

## POWERED CONVEYOR
### for many parts handling jobs



Standard belt widths of 4 to 24 in. and lengths from 4 to 10 ft are offered in the Economy Senior series of powered parts handling conveyors. Oil-proof cleated, or metal belts operate at a standard speed of 65 fpm. Other speeds are obtained by changing sprockets. Conveyors are mounted on wheels and have a telescoping handle for moving by one man. Height and incline angle are quickly adjustable. Made by **Bosworth Mfg. Co.**, 34250 Mills Rd., Avon, Ohio.

▲ For more details circle **NED-194 M9** on enclosed inquiry slip ▲



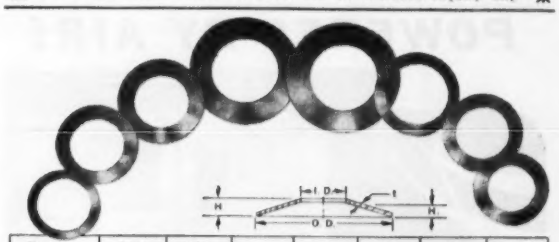
## Compression Springs

Before your designs are frozen, check with our engineers for possible savings. Proper material selection is important. Unnecessarily close tolerances add to cost. Send for pamphlet "Spring Design and Selection—in brief."

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

5819

▲ For more details circle **NED-195 M9** on enclosed inquiry slip ▲




| Part No. | O.D. (max.) | I.D. (min.) | t | H (approx.) | $H_1$ | $P_1$ ±10% | P* |
|---|---|---|---|---|---|---|---|
| .375-15 | .375 | .190 | .015 | .027 | .021 | 35 | 55 |
| .375-20 | .375 | .190 | .020 | .030 | .025 | 60 | 110 |
| 500-18 | .500 | .255 | .018 | .034 | .026 | 45 | 70 |
| 500-25 | .500 | .255 | .025 | .038 | .031 | 95 | 160 |
| 625-22 | .625 | .317 | .022 | .042 | .032 | 70 | 105 |
| 625-32 | .625 | .317 | .032 | .048 | .040 | 145 | 260 |
| 750-28 | .750 | .380 | .028 | .051 | .039 | 110 | 175 |
| 750-40 | .750 | .380 | .040 | .059 | .049 | 235 | 415 |
| 1000-35 | 1.000 | .505 | .035 | .067 | .051 | 175 | 260 |
| 1000-50 | 1.000 | .505 | .050 | .075 | .062 | 340 | 600 |
| 1250-40 | 1.250 | .630 | .040 | .082 | .061 | 230 | 330 |
| 1250-62 | 1.250 | .630 | .062 | .092 | .077 | 475 | 870 |
| 1500-45 | 1.500 | .755 | .045 | .093 | .069 | 284 | 400 |
| 1500-72 | 1.500 | .755 | .072 | .107 | .089 | 665 | 1180 |

*P Calculated Load at Flat Position

## Stock Sizes of Belleville Washers

The sizes listed above are designed primarily for high loads in limited space. Residual stresses are introduced during manufacture; washers can be compressed to flat position and released without loss of free cone height. Good fatigue life may be expected between slight preload and "$H_1$". Send for stock washer pamphlet giving complete information.

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

5841

▲ For more details circle **NED-196 M9** on enclosed inquiry slip ▲

## Engineering, manufacturing, and sales facilities located coast-to-coast for custom service on all your requirements

**BRISTOL, Conn.**
Wallace Barnes Division
Dunbar Brothers Division
F. N. Manross and Sons Division

**SYRACUSE 9, N. Y.**
Wallace Barnes Division
State Fair Boulevard

**CORRY, Pa.**
Raymond Manufacturing Division

**HAMILTON, Ontario, Canada**
The Wallace Barnes Company Ltd.
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**MONTREAL, Quebec, Canada**
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**CLEVELAND 23, Ohio**
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**PLYMOUTH, Mich.**
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**ANN ARBOR, Mich.**
B-G-R Division
401 East Stadium Boulevard

**CHICAGO 14, Ill.**
Gibson Division
1800 Clybourn Ave.

**MILWAUKEE, Wis.**
Milwaukee Division
341 East Erie Street

**LOS ANGELES, Calif.**
Seaboard Pacific Division
15001 South Broadway
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**SAN FRANCISCO, Calif.**
Sales Office
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Saratoga, Calif.

Wallace Barnes Steel Division
Bristol, Conn.
High Carbon Strip Steel

**Associated Spring Corporation**
General Offices
Bristol, Connecticut

how to STRIP residue glue from a coating tank

apply

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THE MIRACLE RELEASING AGENT

With just a thin film of RELEASE-COTE on tank surfaces, glues and adhesives literally "strip" off with ease at clean-up time.

TRYOUT OFFER!

A generous supply of RELEASE-COTE for you to test. (Note how operators like RELEASE-COTE'S gentleness).

$1.00

Distributed by

POTDEVIN MACHINE CO. 273 North Street Teterboro, N. J.

World's largest producer of coating machines.

For more details circle NED-199 M9 on enclosed inquiry slip



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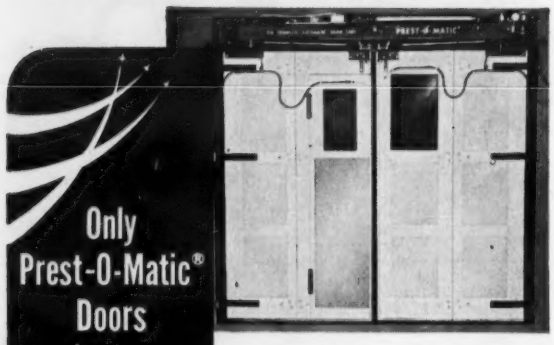


Only Prest-O-Matic® Doors give you a choice of motive power

Fool-proof in performance, moderate in cost, the new Air-Powered PREST-O-MATIC Door keeps in-and-out traffic moving. Prevents slow-downs caused by circuit failure or malfunctions because there's virtually nothing that can go out of whack. Maintenance is almost nil. Connects to available power supply.

Now you can choose Air or Electric power and still get all the quality features of the famous PREST-O-MATIC Door. Door, frame and power operator are complete in one easy-to-install unit. Write today for catalog and specifications.

CLARK DOOR COMPANY, INC. 511 Hunterdon St. Newark 8, N. J.

For more details circle NED-200 M9 on enclosed inquiry slip



Unique, New, Ever Ready

Conduct-A-Lite

POCKET INSPECTION KIT No. 5

THIS AMAZING TOOL actually enables you to see around corners and into otherwise inaccessible areas.

Kit No. 5 (illustrated) consists of a sturdy aluminum Conduct-A-Lite with batteries, one 6" Lucite light conductor, one 4" Lucite light conductor with 24° curve and one distortion-free 1¾" clip-on mirror. It is packaged in a sturdy plastic case that fits easily in a shirt pocket.

Complete kit.....$4.95.

Complete kit with ¾", ⅞" or 1" mirror – $4.95; with ½" or ⅝" mirror – $5.20; with 1¼" mirror –$5.95; with 1½" mirror–$6.60. Specify plain or magnifying type.

Straight or curved Lucite light conductors up to 24" in length are obtainable.

ORDER YOURS TODAY!

FOSTER SUPPLIES COMPANY
6122 Milwaukee Ave.
Dept. NED, Chicago 46, Ill.

FOSTER SUPPLIES COMPANY
6122 Milwaukee Ave.
Chicago 46, Illinois

Gentlemen:

☐ Send ____ No. 5 Conduct-A-Lite kits with mirror size ____ (Unless otherwise specified, plain mirror will be sent.)

$ ____ enclosed ☐ Send C.O.D.

☐ Bill my company.

☐ Send informative literature at no cost.

Name ____

Company Name ____

Address ____

City ____ State ____

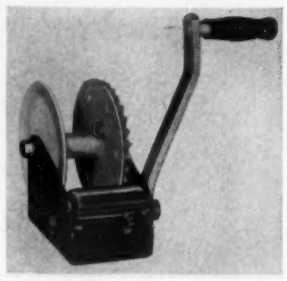
For more details circle NED-201 M9 on enclosed inquiry slip


## MODERN OFFICE DESK
### made of aluminum and wood

Anodized gold or natural rib - fluted aluminum panels and sliding doors are used as an alternative to wood paneling on the Steelwood modular office desk. A welded steel frame encloses side and back panels and houses steel and nylon tracked wood drawers or sliding doors. Frames are available in satin chrome or satin bronze finishes, black, white, and seven colors. In addition to aluminum or walnut, panels and sliding doors are offered in seven Steelwood colors. Desk tops of walnut, gray, or beige high pressure laminate are offered in five sizes from 30 x 45 in. to 30 x 72 in. Made by **Robert John Co.**, 202 S. Hutchinson St., Philadelphia 7, Pa.

For more details circle NED-202 M9 on enclosed inquiry slip

## GEAR-DRIVEN WINCH
### lifts or pulls up to 1000-lb loads



Easy to wind Model 860 Zerco gear-driven winch has a double bridge reinforced frame for strength and ease of loading under all conditions. It is equipped with triple laminated steel gears, spring loaded barrel type ratchet, and a safety hook lock with fingertip control for holding the load in any position. The 7-lb unit lifts up to 1000 lb with 3/16 to ⅜-in. rope or cable. Made by **Raymond Zerr Co.**, 2703 S. Campbell St., Springfield, Mo.

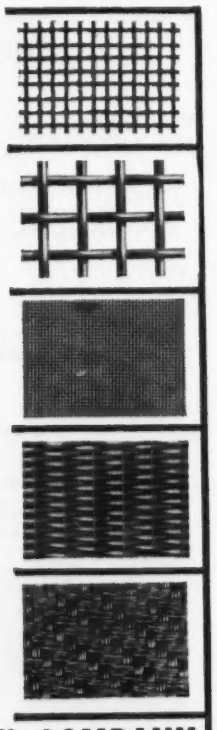
For more details circle NED-203 M9 on enclosed inquiry slip

## CAR SPOTTER
### rope is reeled on drum

Jones Type OP car spotter can be operated without the operator touching the rope, and it can be equipped for remote control from any convenient location. Spotter has enclosed, oil - lubricated, herringbone gear speed reducer and is available in a 5-hp size with a 10-in. drum using ⅜-in. rope and a 7½-hp size with 13-in. drum using ½-in. rope. Made by **Hewitt-Robins, Inc.**, 666 Glenbrook Rd., Stamford, Conn.

For more details circle NED-204 M9 on enclosed inquiry slip


WIRE CLOTH



ALL MESHES
ALL WEAVES
ALL MALLEABLE METALS

including

Monel, Nichrome*, Stainless Steels, Aluminum, Brass, Copper, Bronze, Nickel, Molybdenum, Titanium, Tantalum, Tungsten, Silver and other precious metals.

Rolls or cut to size. Send for literature.

*Driver-Harris Co.

Also

FABRICATED WIRE CLOTH PARTS

Strainers, Filters, Screens, Discs, etc.

NEWARK WIRE CLOTH COMPANY

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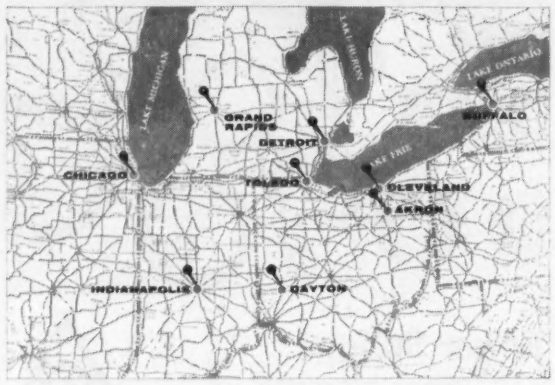
PENINSULAR'S Team of 9 Steel Service Centers working together to give you STEEL plus SERVICE

America's Largest Independent Tool Steel Distributor




TOOL STEELS • ALLOYS • COLD DRAWN • HOLLOBAR
FLAT GROUND STOCK • DRILL ROD • PLATE

Over 40 Years of Service to Industry

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DREXEL 1-9400 • PRESCOTT 8-2121

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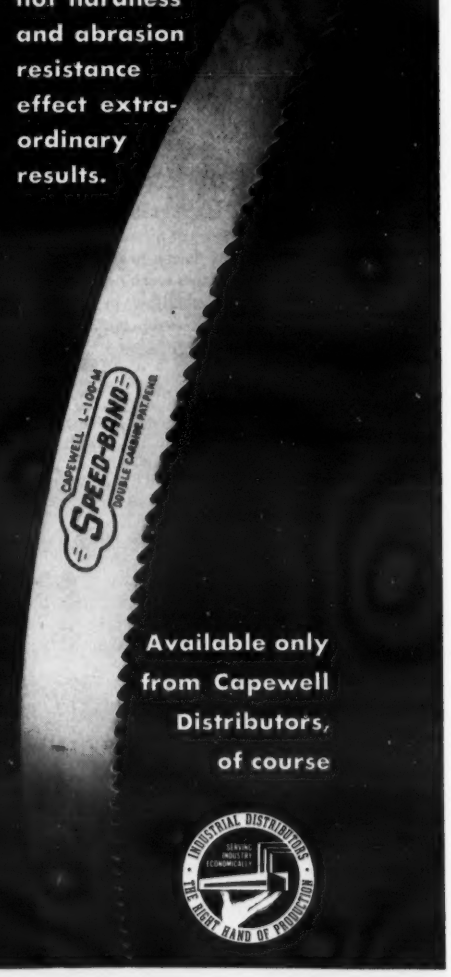
For more details circle NED-206 M9 on enclosed inquiry slip



SPEED-BAND®

the newest concept in band saw blades—made from L-100-M, a double carbide alloy developed especially for band saws. Its hot hardness and abrasion resistance effect extraordinary results.




Available only from Capewell Distributors, of course

CAPEWELL

THE CAPEWELL MFG. CO.
HARTFORD 2, CONN.

For more details circle NED-207 M9 on enclosed inquiry slip

## OUTSTANDING
### FOR SHEARING HEAVY PLATES

It is on heavy plates where the easy accurate cutting action of Steelweld Shears is really eye catching. With nothing more than a quick "oomph" the knife goes through the metal quickly and cleanly, seemingly without effort. The cut edges are straight and sharp.

For all gauges of metal, from the lightest to 1½", you will find Steelwelds superb.

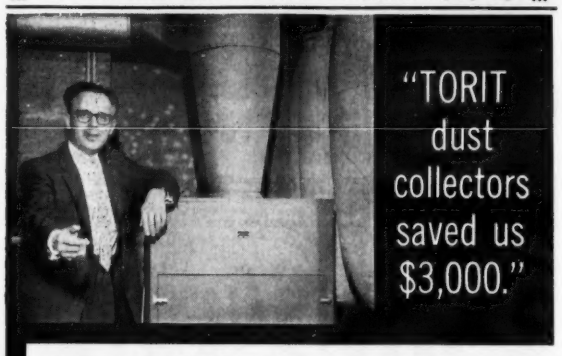
STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

*Send for free copy of catalog No. 2011.*

THE CLEVELAND CRANE & ENGINEERING CO.
6648 East 282nd St., Wickliffe, O.

**STEELWELD SHEARS**

▲ For more details circle NED-208 M9 on enclosed inquiry slip ▲




**FREE BOOKLET shows you how to trap harmful dust better at less cost with TORIT.**

Your plant can have the same initial savings and cost-cutting operation now enjoyed by the Sico Manufacturing Company, national producers of tables and seating equipment. Sico President, Kermit H. Wilson states, ". . the lowest bid we had for a central dust collection system of minimum capacity was just under $4,000. Our $900 Torit installation has completely solved our dust problem and gives us greater flexibility than would be possible with a central system." There's a TORIT Collector to meet every type of dust problem, why not investigate?

*FREE facts on TORIT DUST COLLECTORS that reduce maintenance costs, up production, improve employee morale. Write today to:*

**TORIT MANUFACTURING CO.**
1133 Rankin Street, St. Paul 2, Minn., Dept. 202

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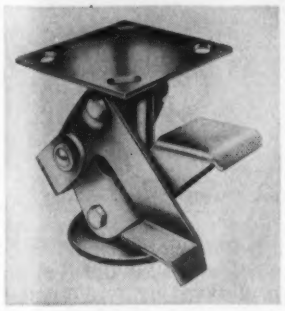
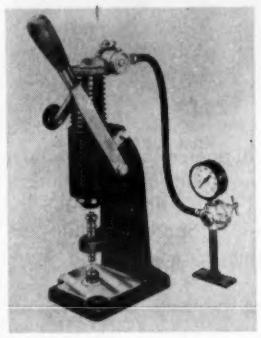
## DOUBLE-PEDAL FLOOR LOCK
### pressing down locks, unlocks unit



Operator never has to lift pedals to unlock this double-pedal floor lock. Separate compression and retraction springs enable him to press down one pedal for locking, the other pedal for retracting the lock. Unit is used on portable equipment having over-all heights from 5⅝ to 12 in. Large spring-connected bottom disc has a nonmarking rubber pad. Oscillating action compensates for uneven floor surfaces. Made by **Payson-Harris & Reed, Inc.**, 2916 W. Jackson Blvd., Chicago 12, Ill.

▲ For more details circle NED-211 M9 on enclosed inquiry slip ▲

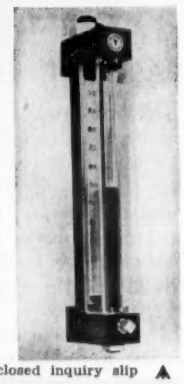
## STAKING & ARBOR PRESS
### tool change takes less than 15 sec



Pressing and staking operations are performed independently, or combined in rapid sequence by the Cramer Air Staker, a combination arbor and staking press. Fit of tools within 0.001 in. and a platen machined square to the work line contribute to accurate assembly of such small components as cams, bushings, gears, shafts, posts, and plates. Tool change for a new job takes less than 15 sec. Force is adjustable. In heavy pressing operations, the operator holds the workpiece down with the arbor press and delivers a series of light blows to the hold-down punch with the air hammer. Made by **Cramer Controls Corp.**, Box 281, Centerbrook, Conn.

▲ For more details circle NED-212 M9 on enclosed inquiry slip ▲

## FLOW METER
### for low mass flow rates



Mass flow rate is accurately determined within plus 1 per cent of full scale with the D-P differential pressure flow meter. Usable for pressures to 200 psi, it is adaptable for high temperatures and corrosive fluids. Pneumatic or electric remote control applications are possible. Meter may be modified for panel mounting. Two or more may be grouped into a single, compact unit. Made by **C-Mar Corp.**, 35 Euclid Ave., Manasquan, N. J.

▲ For more details circle NED-213 M9 on enclosed inquiry slip ▲

## 4 *Hints on fluorescent starter selection*

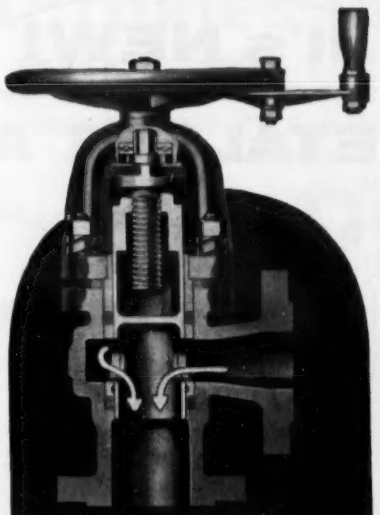
1. **TO USE STANDARD 40W LAMPS IN COLD AREAS** ... use G-E FS-44 Thermal Switch Type Starters
2. **TO PREVENT ONE LAMP BURNING OUT BEFORE THE OTHERS IN 2- OR 3-LAMP FIXTURES** ... use G-E FS-400 Watchdog* Starters
3. **TO ASSURE NO-BLINK OPERATION IN HOT, HUMID AREAS** ... use G-E FS-4NA Automatic Reset Starters
4. **TO GET 17% MORE LIGHT FROM THE SAME FIXTURES** . . . use G-E FS-400 Starters with new G-E "Premium 3" Lamps

**To get a complete listing of helpful hints** . . . ask your General Electric distributor for your free "G-E Starter Selection Chart and Maintenance Guide for Fluorescent Lighting". And, if you have any question that's not answered, we'd like to hear it! General Electric Company, Wiring Device Department, Providence 7, Rhode Island.

**Registered Trade-Mark of General Electric Company*

**GENERAL ELECTRIC**

▲ For more details circle NED-214 M9 on enclosed inquiry slip ▲




YARWAY SEATLESS BLOW-OFF VALVES

**the lowdown on blowdown**

Over 16,000 boiler plants depend on Yarway Seatless Blow-Off Valves. Pressures to 600 psi. Single or tandem combinations. For free Blow-Off Valve Book write YARNALL-WARING CO., 131 Mermaid Ave., Philadelphia 18, Pa.

*Branches in all principal cities.*

**go YARWAY with confidence**

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# Precise Metering of Corrosive Chemicals

**Lapp PULSAFEEDER**

with **Lapp**

## PULSAFEEDER
### CONTROLLED-VOLUME CHEMICAL PUMP

Working with hard-to-handle liquids is routine for the Pulsafeeder. Designed for this kind of work, the Pulsafeeder combines the better features of piston and diaphragm pumps for controlled-volume pumping, eliminating the need for a stuffing box or other leak-likely seal. When the job requires, special corrosion-resistant liquid ends of non-metallic construction are used (illustrated). Parts of solid Lapp Chemical Porcelain, alumina ceramic, and Teflon plastic are combined to assure trouble-free, positive-displacement metering of corrosive chemicals.

**WRITE** *for Bulletin 59 which gives complete specifications on the full line of Pulsafeeder Pumps. Lapp Insulator Co., Inc., Process Equipment Division, 3311 Poplar St., Le Roy, N. Y.*

▲ For more details circle NED-210 M9 on enclosed inquiry slip ▲

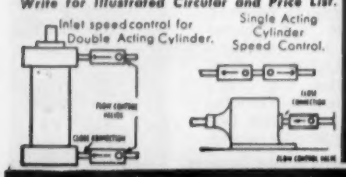
## Get Easier, More Accurate Cylinder Speed Control

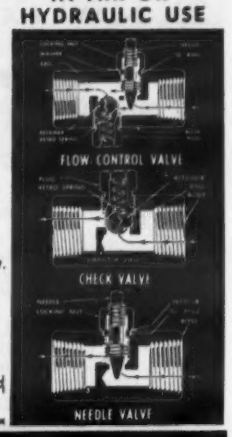
with **Pneu-Trol®** VALVES IN AIR OR HYDRAULIC USE

2,000 (brass or aluminum) and 5,000 (steel) p.s.i.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 5 female pipe sizes — 1/8" to 3/4". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

*Write for Illustrated Circular and Price List.*




AUTO PUNENTS INC. 2929 GRANT STREET BELLWOOD (Chicago Suburb) ILLINOIS

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## It's NEW!

SMOOTH-ON'S ALUMINUM

# METALSET® A4

EPOXY RESIN IN TUBES!

Just squeeze equal lengths from each tube. Mix. Use. Take only what you need. Keep what's left for the next job.

### Advantages of METALSET® A4

- No solvent to cause shrinkage
- Hence, use it in *any* thickness, all at one time
- Adhesive: to steel, iron, aluminum, glass, and all porous materials like wood and ceramics
- Hard: can be drilled and tapped
- Stable: waterproof, oilproof, chemically resistant
- Flexibilized against thermal and mechanical shock
- Not only is revolutionary epoxy-resin cement easy to use: — Metalset A4 is non-flammable, hardens at room temperature, and is made with minimum-toxicity materials only

### TYPICAL APPLICATIONS...

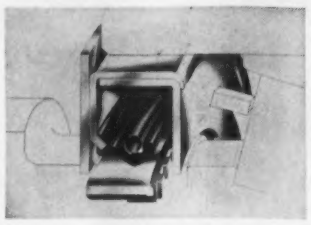
- Stops leaks in pipes, tanks, concrete
- Bonds metal to metal, wood, concrete
- Smooths and fills dents in sheet-steel, aluminum
- Sets loose parts tight
- Caulks windows, roof fixtures, sidewalk elevators

# METALSET®

Made by Smooth-On Manufacturing Company
ESTABLISHED IN 1895
572 Communipaw Avenue, Jersey City 4, N. J.

▲ For more details circle NED-217 M9 on enclosed inquiry slip ▲

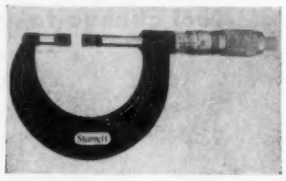

## SHAFT-TYPE OIL SEAL
### features an integral wear sleeve



A wear sleeve is an integral part of this Unitseal shaft-type oil seal. Sleeve has an inside surface of rubber and an outside surface of a special polished metal. Sleeve turns with the shaft, allowing the seal lip to run on the metal sleeve rather than on the shaft. Seal failures due to shaft wear or varying shaft conditions are minimized. Unitseals can be made in various sizes, for both single or double lip applications by **Federal-Mogul-Bower Bearings, Inc.**, National Seal Div., Redwood City, Calif.

▲ For more details circle NED-218 M9 on enclosed inquiry slip ▲

## BLADE TYPE MICROMETERS
### measure narrow grooves and lots

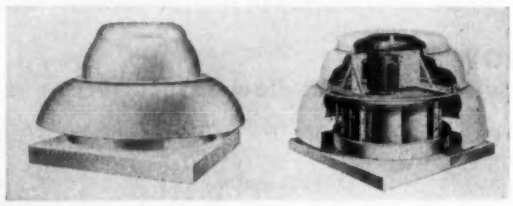


Blade type anvil and spindle of 486 Series micrometers are only 0.030 in. thick and will measure depths up to 5/16 in. They accurately measure narrow groove, slot, keyway, or recess depths, and the diameters between lands, fins, or ridges. The spindle is nonrotating. Size ranges offered are 0-1, 1-2, 1½-2½, 2½-3½, and 3½-4½ in. All have 0.001-in. graduations. "Speeder" end permits rapid turning of the thimble. Made by **L. S. Starrett Co.**, Athol, Mass.

▲ For more details circle NED-219 M9 on enclosed inquiry slip ▲

## ROOF VENTILATORS
### low profile type in 89 models

Heavy gage spun aluminum housings and nonoverloading, backward curved, nonsparking aluminum fan wheels are featured in Centriflow fan roof ventilators.



The low profile units are offered in 25 basic selections of tip speeds and capacities in direct drive models and 64 basic belt drive models. Ratings from 1/60 to 7½ hp provide capacities from 65 to 27,648 cfm. Motors and drives have resilient mountings in separate compartments out of the air stream. Adjustable sheaves on V-belt drive models permit changing capacity. Made by **Burt Mfg. Co.**, Dept. NE, 44 E. South St., Akron 11, Ohio.

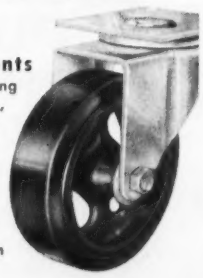
▲ For more details circle NED-220 M9 on enclosed inquiry slip ▲


## FREE NEW 16 PAGE CATALOG

Send for our new fully illustrated catalog showing the complete line of Midwest Industrial Casters. Explains uses, types, construction. Easy to read charts give complete specifications.

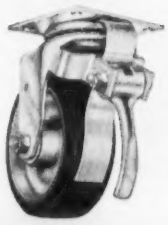
**Made To Meet Your Requirements**
Thousands of Midwest Casters are being used by Automotive, Aircraft Industries, Stamping Plants, General Construction Companies, Foundries, Bakeries and Warehouses.

**They Are Built Better—Work Better**
Years of on-the-job service have proven Midwest Casters to be dependable and economical. You save when you buy them . . . You save when you use them.



**PressCoin now available for Scaffolds. 5"-6"-8" Wheels and *Foot Operated* Brake-Lock**

New lock securely holds both wheel and swivel rigidly in position. Available in 5"-6"-8" stem-type or with regular top plate.



MIDWEST PRECISION CORPORATION JACKSON, MICHIGAN

▲ For more details circle NED-221 M9 on enclosed inquiry slip ▲



# KEEP MACHINES RUNNING
## ...reduce maintenance costs,

with DEUBLIN ROTATING UNIONS

¾" Size Union Illustrated

## for water, steam and air service!

Here is a compact, efficient rotating union—

- ★ LEAKPROOF
- ★ CORROSION PROOF
- ★ EASY TO SERVICE
- ★ VIRTUALLY FRICTIONLESS
- ★ PRECISION BUILT FOR LONGER LIFE
- ★ INTERCHANGEABLE with any other rotating union
- ★ VERSATILE—For Monoflow or Duoflow operation, available in ½", ¾", 1", 1¼" and 1½" sizes
- ★ MINIMUM TORQUE makes it ideal for high speed applications

See how this dependable, new rotating joint can reduce inventory of replacement parts because of Deublin's standardization of sizes. Keep "shut downs" from wrecking your production schedules. Pays for itself many times over.

*Write today for full details and prices.*

104 DEUBLIN COMPANY
1925 STANLEY ST., NORTHBROOK, ILLINOIS

▲ For more details circle NED-222 M9 on enclosed inquiry slip ▲



NEW BALANCED CUTTING ACTION

# Severance ECARNO-MILLS

THE ECONOMY MILL NEW DESIGN NEW CARBIDE

Make your money count! Replace more H.S. Rotaries and Mounted Grinding Points.

SOLID CARBIDE CUTTING HEADS

22 Shapes and Sizes Available

A NEW LOW PRICED HIGH CLASS PERFORMER

*Made by the originator of ground-from-the-solid Rotary Files, and pioneer in this type of Carbide Mill, who presently offer the largest range of standard types, shapes, and sizes.*

YOUR SPECIAL DEBURRING PROBLEMS ARE SOLICITED

OPERATE EFFICIENTLY AT USUAL CARBIDE SPEEDS, YET PERFORM BEAUTIFULLY AT THE SLOWER SPEEDS OF STEEL CUTTERS

PHONE, WIRE, OR WRITE US NOW FOR PRICES

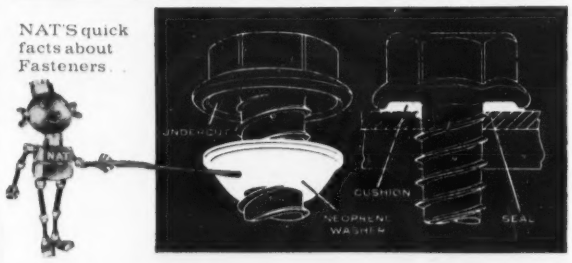
Severance TOOL INDUSTRIES INC.
761 Iowa Ave., Saginaw, Michigan

*Ask for a Severance catalog today!*

▲ For more details circle NED-223 M9 on enclosed inquiry slip ▲



NAT'S quick facts about Fasteners . .




## With TUFF-TITE Fasteners
TRADEMARK

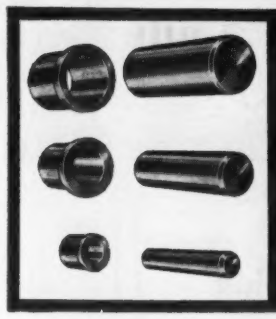
## ... it's the cushion control that counts!

Preassembled neoprene washer won't ooze off when compressed. It forms a firm, even cushion under the head . . . seals off hole . . . prevents leakage. It also dampens vibration and protects fine finishes against marring and crazing.

Available as machine, self-tapping, or wood screws. Also as stove bolts, roofing bolts or special fasteners. Write for literature or for help on any possible application.

The National Screw & Mfg. Company
Cleveland 4, Ohio
Los Angeles 22, Calif.

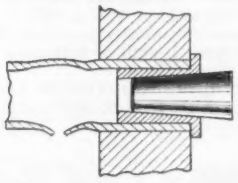
▲ For more details circle NED-224 M9 on enclosed inquiry slip ▲



2-piece design of ELLIOTT TUBE PLUGS offers many advantages

**For Condenser and Heat Exchanger Tubes**

- Quickly and effectively seals off leaky tubes without damage to tube sheets.
- Matching tapered ring and pin engineered for easy installation and dependable service.
- Designed to give even expansion of pin to ring and long contact to the seal.



**EASY APPLICATION**

- Place ring in tube
- Insert pin in ring, tap lightly until seated
- A few sharp blows with hammer make tight, effective seal

*Available in brass, steel, stainless steel and aluminum.*

**ELLIOTT Company**
LAGONDA PLANT, SPRINGFIELD, OHIO

Y8-4

For more details circle NED-225 M9 on enclosed inquiry slip



**NOW CARRY A TERRIFIC LOAD WITH NO HEADACHES!**

*. . . by using* **NU-RAIL FITTINGS**
*for every storage need*
*no clamps, no washers, no nuts to assemble*

This major Hawaiian liquor broker discovered Nu-Rail Slip-On fittings, and now . . . his storage headache's gone! It's so easy to construct storage racks with high-tensile aluminum Nu-Rail structural fittings because NO WELDING OR THREADING is needed. Fittings just slip over the pipe, and with one quick twist of a hex wrench the job is done!

*no other fitting can save you . . .*

- 80% on LABOR COSTS
- 30% on MATERIALS COST
- 60% on INSTALLATION TIME ...with 100% PIPE SALVAGE

**Write for Bulletin 28E and find out all about NU-RAIL and the lighter duty SPEED-RAIL fittings.**

THE HOLLAENDER MANUFACTURING COMPANY
3841 Spring Grove Ave., Cincinnati 23, Ohio

For more details circle NED-226 M9 on enclosed inquiry slip

**Pick the right paint for the job**

**FREE PAINT INDEX**

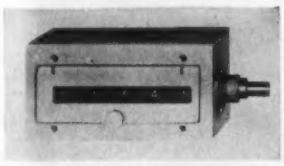
Whatever your painting problem, there's *one* paint especially formulated to give the *most effective* protection. With this handy guide, choosing that paint is simple and easy. Profitable, too, because the correct choice will wear longer, save you money on costly repaints. Write for your free money-saving Paint Index today!

**Heavy-Duty Maintenance Paints Since 1883**

**TROPICAL PAINT COMPANY**
1124-1228 W. 70th, Cleveland 2, Ohio
PARKER RUST PROOF PRODUCTS

For more details circle NED-227 M9 on enclosed inquiry slip

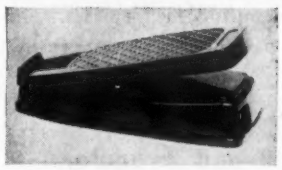

## SHAFT DRIVEN COUNTERS
### telemeter shaft rotation, position



Compact, lightweight 1100 and 1200 Series counters for telemetering shaft rotation and position are available with either, 3, 4, or 5 wheels, each indexed from 0 to 9. The 1100 Series has electrical contacts which correspond with each number on each wheel, whereas 1200 Series unit are furnished with precision resistors mounted between contacts. This forms a stepped potentiometer or voltage dividing network, with resistance ratios proportional to visual indication. Made by **Photocon Research Products**, 421 N. Altadena Dr., Pasadena, Calif.

For more details circle NED-228 M9 on enclosed inquiry slip

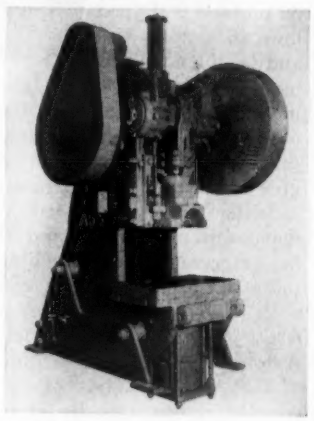
## FOOT-CONTROLLED RHEOSTAT
### regulates small electric motor speed



Coiled tension spring in this foot-controlled rheostat allows quick foot response. Accurate adjustment at any desired speed is by means of a set screw on the foot lever. Designed for regulating the speed of small, low power electric motors, the rheostat consists of a stack of carbon capsules enclosed in a ceramic case. Control lever may be modified for hand operation, remote control, or automation. Rating is 110/220 v, 60 cycles, 0.5 amp. Made by **Milo Mfg. Co.**, 259 N. Broad St., Elizabeth, N. J.

For more details circle NED-229 M9 on enclosed inquiry slip

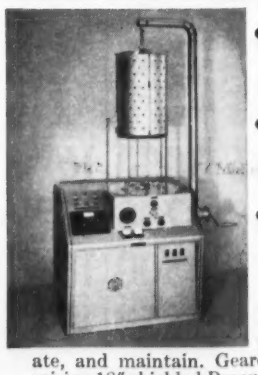
## INCLINABLE PRESSES
### made in 5½ to 190-ton models



Thirteen standard sizes with shaft diameters from 1¼ to 6½ in. are available in Series A open - back inclinable presses. Capacities range from 5½ to 190 tons. Mechanical sleeve clutch will handle work requiring continous engagement and disengagement at every press stroke. A pneumatic inclining device and a split belt guard to facilitate slide raising and lowering are optional. Bed areas range from 9⅞ x 6¼ in. to 50 x 30 in. and speeds from 290 to 44 strokes per minute, depending upon press size. Made by **Niagara Machine & Tool Works**, 683 Northland Ave., Buffalo 11, N. Y.

For more details circle NED-230 M9 on enclosed inquiry slip


**NEW VACUUM METALLIZER**



- For research or small scale deposition of metals and salts on metals, glass, plastics, ceramics, etc.
- Permits multiple source evaporations and close control of filament voltage from 0 – 40 V.
- Power, high voltage, thermocouple, work positioning, etc. feed-throughs are easily relocated at any of 17 points.

Packaged 35" x 48" x 112" unit is easy to install, operate, and maintain. Geared hoist takes work out of raising 18" shielded Pyrex or 24" O.D. mild or stainless 30" high bell jar. Vibration-isolated, 6" pumping system with optical baffle cold trap gives fast, "clean" pump-down to $10^{-6}$ mm. Hg. Write today for details on NRC Model 3144.

NRC EQUIPMENT CORPORATION

*A subsidiary of National Research Corporation*
Dept. 29-L, 160 Charlemont St., Newton 61, Massachusetts • DEcatur 2-5800

For more details circle NED-231 M9 on enclosed inquiry slip



**NEW! Norgren PRESSURE REGULATOR**

Actual Size

for Air, Non-corrosive Gases and Liquids

Best performance of any regulator this small . . . at a low price!

*If it's Norgren. . . It's Dependable.*

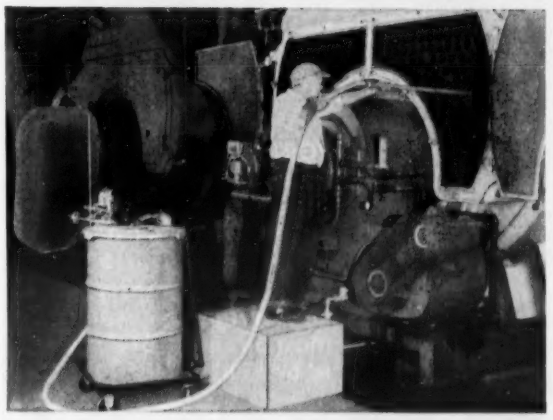
WRITE FOR BROCHURE No. 918 **C. A. NORGREN CO.**

3405 SOUTH ELATI STREET ENGLEWOOD, COLORADO

For more details circle NED-232 M9 on enclosed inquiry slip



**FACTORIES CUT FUEL BILLS**
**WHEN BOILERS ARE CLEANED WITH**
**TORNADO®**



*SAVINGS OF 25% UP TO 40% WITH THIS NEW METHOD OF BOILER CLEANING*

Take a look at your fuel bills and imagine what it would mean if you could save 25% or up to 40% of this cost.

The new Tornado Method of Boiler Cleaning with a Tornado Jumbo Vac can mean this savings to you. What's more, boiler cleaning becomes an easy task for anyone when Tornado is on the job.

Tornado Jumbo Vacs fit right on any standard 55 gallon drum. Complete attachments and a 4 wheel dolly are available.

*WRITE FOR BULLETIN 951*
*"TORNADO METHOD OF BOILER CLEANING"*

See us at the 1960 Plant Maintenance and Engineering Show—Philadelphia, Pa., January 25-28, 1960. Booth 1216.

**BREUER ELECTRIC MFG. CO.**
5116 N. Ravenswood Avenue, Chicago 40, Illinois

For more details circle NED-233 M9 on enclosed inquiry slip

HOW TO ENGINEER SPECIFY ORDER PRICE...

# HYDRAULIC CYLINDERS

Here is complete engineering data on Hannifin's newest line of hydraulic cylinders. Every mounting style is fully dimensioned in all sizes. Standard models or special modifications are made easy to specify. The price sheet, too, is easy to understand, easy to use.

Write for Bulletin 113-B.

**HANNIFIN**

Hannifin Company, 527 South Wolf Road, Des Plaines, Ill.

(Hannifin Company is a division of Parker-Hannifin Corporation)

For more details circle NED-234 M9 on enclosed inquiry slip



# General

# BIG GUN BOOMS!

13" KL DYNA-CRAFT LOW PRICE WINS WHEREVER TRIED!

"BLITZES" MAINTENANCE COSTS!

PORTABLE, MID-WEIGHT, ALL-DUTY FLOOR MACHINE — packed with GENERAL *quality-engineered features* — including a really new idea in *Handle Versatility!* Must be seen—*and tried*—to be believed!

There's a GENERAL in every price and size range!

Made the General QUALITY Way $159.50

SUCCESSFULLY USED IN ALL THESE FIELDS:

FACTORIES
OFFICES
HOSPITALS
SCHOOLS
CHURCHES
HOTELS
THEATERS
RESTAURANTS
BARS
MOTELS
STORES
HOMES

BEFORE YOU BUY, SEE GENERAL! There's a BIG difference in floor maintenance equipment!

**General FLOORCRAFT, INC.**

3630-50 Rombouts Ave., Bronx 66, N.Y. Established 1930

World's Most Complete Line of Industrial and Household Floor Maintenance Machines and Vacuums

All Sizes for All Types of Floors — Made by Floor Machine and Vacuum Specialists

Generals are Feature-Filled! MAIL COUPON for complete details

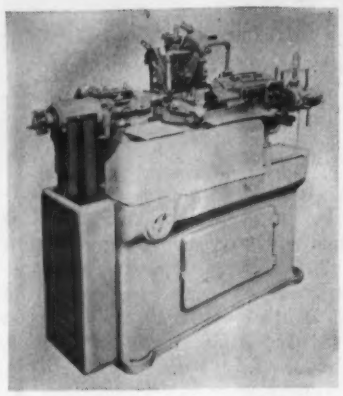
☐ Have Distributor call on us. NE-12
☐ Send complete information, literature and prices.
☐ Floor and Rug Cleaning Machines ☐ Vacuums

Company_____
Street_____
City_____ State_____
My Name_____ Title_____

For more details circle NED-235 M9 on enclosed inquiry slip


## AUTOMATIC LATHE

### 2.5-hp unit has ½-in. capacity

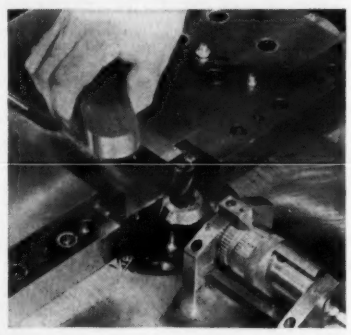


Maximum spindle speed of 10,000 rpm and stock capacity of ½ in. are featured by this Swiss Tornos R 125 automatic lathe. Machine provides 28 spindle speed changes and 40 cam shaft speeds for each spindle speed. Other advantages include guided attachment seats, instantly adjustable micronic headstock bearings, single lock toolposts, and an infinite combination of second operation accessories. Turning length in one chucking with a plate cam is 2¾ in. and 4 in. with a bell cam. Maximum threading diameter is 5/16 in. for steel and ¼ in. for brass. Distributed by Carl Hirschmann Co., 30 Park Ave., Manhasset, Long Island, N. Y.

For more details circle NED-236 M9 on enclosed inquiry slip

## PROFILE MILLING MACHINE

### quickly cuts radii and irregular shapes in arcs to 180 degrees



Previous operator experience or training are not required to operate the McKay Radii high speed profile milling machine, offered in semiautomatic and fully automatic models. Material to be profiled is slipped into a simple vise and a handle is moved through a 180-degree arc. On the automatic model the tool feed is pushbutton actuated. The semiautomatic machines cut simple radii, while the automatic model produces any profile within a 180-degree arc, milling irregular shapes as well as true radii.

Semiautomatic lever-fed Models 11 and 11A take maximum part width and thickness of 2½ and 1¼ in., respectively, and machine a 1¼-in. maximum full radius. Cutter speeds are 100 and 64-260 sfpm. Model 21 with manual crank-gear reduction tool feed takes 6 x 3-in. parts and machines a 3-in. maximum radius. Automatic Model 12 machines a maximum part width of 3 in., part thickness of 1¼ in., and has a minimum concave radius capacity of ½ in. Cutter speed is 64 to 260 sfpm. Vise jaws are micrometer-adjusted. Made by McKay Machine Co., Box 180, Youngstown 1, Ohio.

For more details circle NED-237 M9 on enclosed inquiry slip


The BECO

SUPER-LIFT LEVER DOLLY

| LENGTH | LIFT | SHIPPING WT. (pair) | POUNDS CAPACITY | PRICE (ea.) |
|---|---|---|---|---|
| 4' | 8" | 36 | 3000 | 16.00 |
| 5' | 8" | 62 | 3750 | 17.00 |
| 6' | 8" | 76 | 4500 | 18.00 |
| 7' | 8" | 88 | 5250 | 19.00 |

Rubber or Metal Wheels
Immediate Delivery
WRITE FOR QUANTITY DISCOUNT SHEET

BECO - Bettendorf, Iowa

For more details circle NED-238 M9 on enclosed inquiry slip



You can really cut costs with Standard's

# ALL-NEW conveyor belt table

with a wide range of assembly-sorting-processing applications

This new Standard belt table provides more speed, more efficiency on all assembly, sorting or processing operations. Flat top extends all the way across the conveyor frame, and is adjustable sideways for quickly adapting unit to changes in production procedure. Nine standard belt widths — from 6" to 24". Six table widths — from 18" to 48". Heights adjustable from 16" to 79".

Powered by reliable Handidrive unit: constant or variable speed from 5 to 120 fpm. Length of belt table up to 75 feet.

Write Dept. K-12, STANDARD CONVEYOR COMPANY, General Offices, North St. Paul 9, Minnesota.

*Sales and service in principal cities*

Standard GRAVITY & POWER CONVEYORS

OVER 50 years of conveyor experience

For more details circle NED-239 M9 on enclosed inquiry slip



*Adjustable speed up to 2000 hp*

## Louis Allis MAGNETIC DRIVE

Based on a liquid-cooled magnetic coupling design, this unique drive features stationary-field construction — has no slip rings. Its exclusive annular cooling manifold prevents "flooding" of the drive and bearings—and eliminates condensation in the bearings with planned air-flow cooling. Conduit box, cooling inlet, and discharge can be conveniently located regardless of direction of rotation.

Specify your hp needs and Louis Allis will tailor the drive for the job. Write for Bulletin 3650. The Louis Allis Co., 436 East Stewart Street, Milwaukee 1, Wisconsin. ASD-136

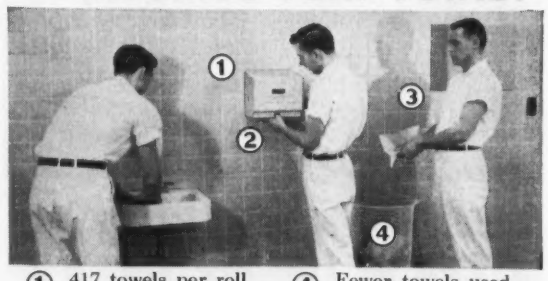
LOUIS ALLIS

For more details circle NED-240 M9 on enclosed inquiry slip



What does your towel service cost?

You can raise the standard of service ...yet reduce the cost by using Mosinee Turn-Towls!




1. 417 towels per roll mean less cabinet filling
2. Push button control means 40% to 50% less towels used
3. Pure sulphate towel means fast drying — extra strength
4. Fewer towels used mean less washroom maintenance

*Write for name of nearest distributor*

MOSINEE Sulphate Towels
BAY WEST PAPER CO. 1084 W. Mason St. GREEN BAY • WIS.

For more details circle NED-241 M9 on enclosed inquiry slip

CUT COSTS, simplify inventory with AO R4000 Series Respirators. Two facepieces and 13 different types of cartridges offer greatest number of respirator-goggle combinations yet against multi-hazards. Filters interchange quickly. Recommended uses: For mists, dusts, vapors, fumes and gases singly or in combination in the chemical industry, general industry, agriculture. Also for protection against radioactive particulate. *Can be worn over glasses.* Model shown is the AO R4157. Your nearest AO Safety Representative can supply you. Or send for Bulletin S-8016.

*Always insist on Trademarked Safety Products*

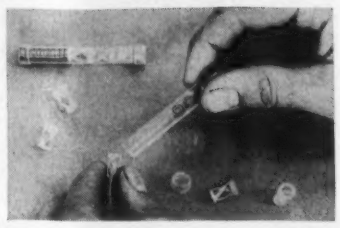
American Optical COMPANY SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS *Safety Service Centers in Principal Cities*

▲ For more details circle NED-242 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-243 M9 on enclosed inquiry slip ▲

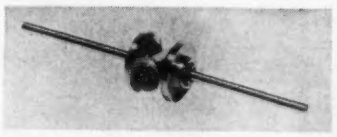
## BALL BEARING PACKAGING prevents damage during shipment



Miniature and instrument ball bearings, the smallest of which has a 0.1-in. OD, are packaged with polyethylene buffer to prevent damage during shipping. They are precision ground to tolerances of 0.00015 in., making it imperative that they receive no nicks or scratches. Different quantities and sizes of bearings are shipped in any of six standard plastic vials. Remaining air space is filled with the buffers to prevent movement and consequent in-transit damage. Buffers are lint-free and resilient. Made by **New Hampshire Ball Bearings, Inc.**, Route 202, Peterborough, N. H.

▲ For more details circle NED-245 M9 on enclosed inquiry slip ▲

## MINIATURE DIFFERENTIAL gears have 100 to 600 teeth



Shaft sizes of 5/64, 3/32, and 1/8 in. are offered in Type V15 miniature precision differentials. They meet MIL specifications, are equipped with ball or oilless bearings, and have end gears of stainless steel and aluminum in 96, 120, and 200 pitches. Teeth range from 100 to 600. Static friction under load does not exceed 5 per cent and lost motion between any two end gears is not more than 10 min of arc. Load rating in 10 oz-in. and maximum operating speed for ball bearing unit is 1000 rpm. Made by **PIC Design Corp.**, 477 Atlantic Ave., East Rockaway, L. I., N. Y.

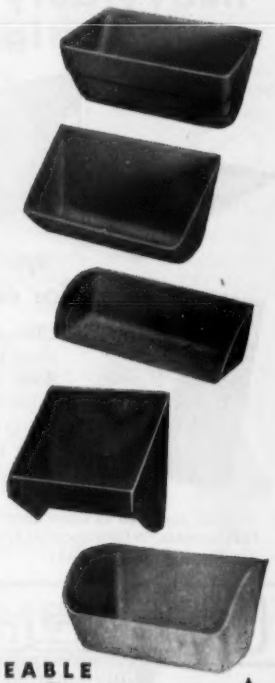
▲ For more details circle NED-246 M9 on enclosed inquiry slip ▲

## LAMP REFLECTORS are all-white porcelain enamel

Medium and high mounting reflectors for RLM Specifications 4A, 4B, and 4C are all-white porcelain enameled units in 16 and 18-in. diameters. Designed for 400-w mercury and 300 to 1500-w incandescent lamps, reflectors incorporate top ventilation with a protective aluminum drip shield. They are available with threaded socket or the Quad Easy-Tach construction for pendant or box type mounting. Also available are nonventilated glass-covered units. A twin hanger with either 1/2 or 3/4-in. tap is also offered. Made by **Quadrangle Mfg. Co.**, 32 S. Peoria St., Chicago 7, Ill.

▲ For more details circle NED-247 M9 on enclosed inquiry slip ▲

Long-lasting elevating efficiency is a certainty with Link-Belt cast buckets. Their smooth surfaces, well-rounded corners and proper proportioning assure quick filling . . . fast, clean discharge. And they're reinforced at points of greatest stress to resist wear and distortion. These exceptionally durable buckets are available in malleable iron or Promal. For complete facts and specifications write for Book 1050.



**STYLE AA** — Recommended for heavy, gritty materials such as sand, gravel, stone. Has a reinforced lip for digging and added wear life.

**STYLE B**—Used on inclined elevators handling coarse materials. Low front design assures clean discharge at relatively low speeds.

**STYLE C** — Designed for easy, efficient handling of finely pulverized or wet materials that have a tendency to stick or pack.

**STYLE D** — This continuous type bucket provides clean, gentle handling of coal, sand, gravel, crushed stone and other dry materials.

**STYLE SC** — Ideal for elevating either dry or relatively wet materials. Can handle greater capacities than styles A or C.

MALLEABLE CAST AND STEEL FABRICATED

All Link-Belt steel buckets are of welded construction . . . all are formed of heavy-gauge steel. HS type is designed for high-speed and maximum capacity. Salem buckets are shaped for proper filling and free discharge of granular, powdered, free-flowing materials. Continuous buckets offer clean discharge at low speeds of crushed stone, ore, coal and other bulky, gritty materials.

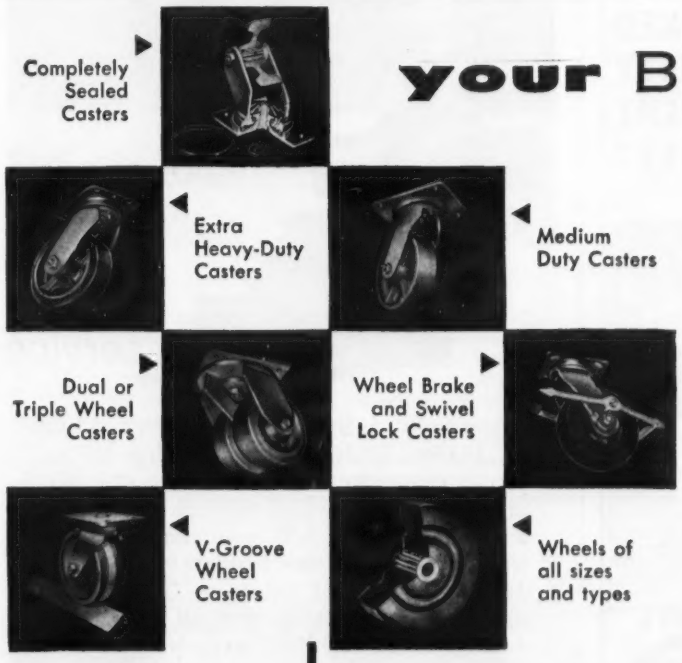
For full information, contact your nearest Link-Belt office or authorized stock-carrying distributor. Write for Book 1050.

LINK-BELT

ELEVATOR BUCKETS

LINK-BELT COMPANY, Prudential Plaza, Chicago 1, Ill.

▲ For more details circle NED-248 M9 on enclosed inquiry slip ▲




your BEST move!

ALBION *industrial . . .* CASTERS

Albion casters checkmate your materials handling problems. They are versatile, dependable, economical and available *right now*. Whether you need a caster for light, medium, heavy or extra heavy duty requirements—standard or special—Albion casters are the practical answer.

Albion casters are available in every conceivable range of Industrial size, type, capacity and desired wheel type to suit your needs.

Make the *best* move...get all the facts on Albion Casters today. Write, wire or phone for the information you need. Albion is always at your service.

*Do it now . . .* request your copy of the Albion Caster and Wheel catalog. Yours for the asking.

ALBION INDUSTRIES, INC.

*Distributors in Every Strategic City*

Main Plant: ALBION, MICHIGAN

▲ For more details circle NED-244 M9 on enclosed inquiry slip ▲

SAFETY GRIP-STRUT Patented

STAIR TREADS

*for greater safety • for greater economy*

Use Safety GRIP-STRUT stair treads throughout your plant, on your manufactured products for greater anti-skid protection. All one piece of material with open area in excess of 55% total area, easy to flush clean, greater strength with less weight, in steel or aluminum.

**Available at Globe Distributors in all principal cities. Consult yellow pages in your phone book under "stair treads."**

**PRODUCTS DIVISION**
**THE GLOBE COMPANY**
**4002 S. PRINCETON AVE. • CHICAGO 9, ILL.**

▲ For more details circle NED-249 M9 on enclosed inquiry slip ▲



HORIZONTAL DOORS:

*heavy-duty weathertight*

*spring-balanced for easy opening!*

Choose Bilco doors to replace those ponderous, old-fashioned floor- and sidewalk-access doors. Bilco spring-balanced doors feature built-in drainage, long trouble-free life.

FREE CATALOG

Tells all you need to know about sidewalk and basement doors, roof scuttles, ceiling doors and flush floor doors; measurements, weights, specification data!

Bilco®
HORIZONTAL SPRING-OPERATED DOORS

**The Bilco Co., Dept. A1612 New Haven Conn.,**

▲ For more details circle NED-250 M9 on enclosed inquiry slip ▲

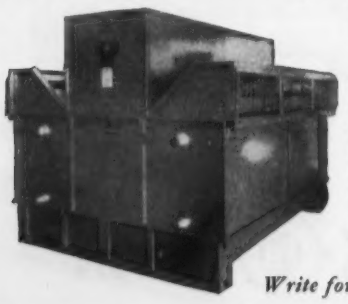


# NIAGARA Aero

## SECTIONAL HEAT EXCHANGER

### A Self-Contained Cooling System

● Niagara *Aero* Heat Exchanger offers a completely self-contained system independent of any considerable water supply, replacing both shell-and-tube cooler and cooling tower. Water consumption is only the evaporation and the small amount passed as blowdown to prevent hardness build up. Net saving is 95% of water used in cooling from external sources. You solve the problem of water supply and disposal; you save much additional expense and equipment in water handling, piping, pumping.



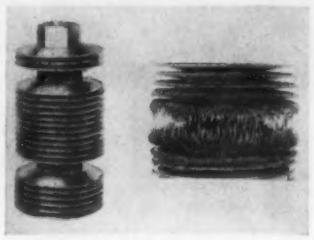
Casing panels are removable with full access to all parts and interior piping for easy inspection. Sections are shipped as flat panels with saving in freight charges.

*Write for Bulletin No. 132*

**NIAGARA BLOWER COMPANY**
**Dept. ED-12, 405 Lexington Ave., New York 17, N.Y.**

▲ For more details circle NED-251 M9 on enclosed inquiry slip ▲

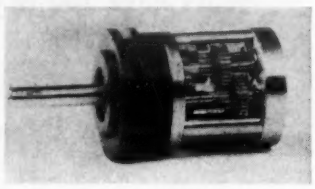

## MAGNETIC SUMP STRAINER
### circular magnets trap iron filings



Iron filings and nonmagnetic matter are effectively trapped by this magnetic sump strainer for hydraulic systems. Strainer has built-in circular magnets placed between removable filter discs at specific intervals and thus performs a dual filtering action. It is designed so that all fluid passes through the strainers. When filter is disassembled, cleaning is quick and easy. A range of standard and special sizes is made by **Ripley Screen & Strainer Co.**, Filter Div., 32749 Northwestern Highway, Farmington, Mich.

▲ For more details circle NED-252 M9 on enclosed inquiry slip ▲

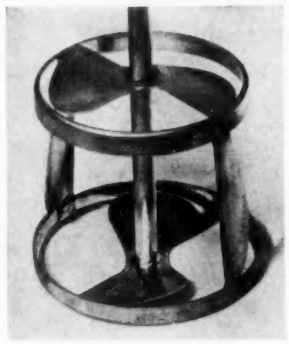
## REDUCERS & GEAR HEADS
### have 30-min maximum backlash



Standard gear heads, speed reducers, and speed increasers are stocked in various ratios in sizes 8, 10, 11, 15, and 18. Capable of transmitting high torque in short length, units operate in a −55 to 150° C range. Maximum backlash at output shaft at any ratio is 30 min. They have either sleeve or ABEC 7 ball bearings and are available with preset mechanical slip clutch for overload protection. Made by **Kinetic Instrument Corp.**, 1070 Linwood St., Brooklyn 8, N. Y.

▲ For more details circle NED-253 M9 on enclosed inquiry slip ▲

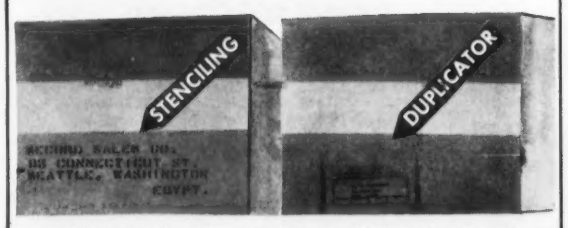
## SPLASH-FREE MIXER
### usable in portable power drills



Two horizontal axially opposed impellers mounted on a vertical shaft and two vertical blades mounted on peripheral rims comprise this mixer for use in chuck - equipped power tools. When rotated at 450 to 750 rpm, the lower impeller sucks high density materials from the bottom of the container upward and the upper impeller forces low viscosity materials or solvents downward. A 5-gal can of paint can be mixed and blended in less than 60 sec without splashing or aeration. Heavy duty Model P and light duty Model H sell for $15.95 and $2.95, respectively. Made by **Jiffy Mixer Co.**, 515 Market St., San Francisco 5, Calif.

▲ For more details circle NED-254 M9 on enclosed inquiry slip ▲

HAVE YOU CHECKED THE READABILITY OF YOUR SHIPMENT ADDRESSING LATELY?




COMPARISON OF READABILITY FROM A DISTANCE OF SIX FEET.

In this day of increased freight rates caused by freight claims due to lost shipments it's time to take a close look at your shipment addressing. Are you getting clear, readable, large letter results? If not you should be interested in better addressing through the use of machine cut stencils. Keep this in mind — regardless of how you apply your address — it must be read easily by freight handlers.

IT'S THE RESULT THAT COUNTS

For a peek into what improper marking is costing you send for this FREE booklet of facts today. WRITE TO DIAGRAPH-BRADLEY INDUSTRIES, INC. P. O. BOX 269 HERRIN, ILL.

▲ For more details circle NED-255 M9 on enclosed inquiry slip ▲



Better Steel Think about Rule Dies!

Save up to 90%

FOR SHEARING, BLANKING, PUNCHING, PIERCING

YOU CAN MAKE STEEL RULE DIES FASTER, BETTER, CHEAPER WITH *RICHARDS* STEEL RULE DIE-MAKING EQUIPMENT!

Build steel rule dies in your own plant! Production cost and waiting time go down when Richards Equipment goes to work for you! More and more progressive manufacturers are turning to steel rule dies for faster, higher-profit work on all types and gauges of metal.

Richards' fifty years of experience as pioneer manufacturers of steel rule die-making equipment and supplies provides you with a complete service.

*J.A. Richards Company*

NORTH PITCHER STREET • KALAMAZOO, MICHIGAN

▲ For more details circle NED-256 M9 on enclosed inquiry slip ▲



Look for this... JENKINS on SOLDER END Valves, too

...make sure of long, reliable service

Solder Ends . . . Socket Ends . . . Screwed Ends . . . Flanged Ends. Whatever the lines call for, you can have the known assurance of quality and economy for which the Jenkins Diamond trade-mark stands. ASK your Jenkins Distributor, or write us for Folder 198-A about Jenkins Solder End Valves — Globes, Gates and Checks — that cover all your needs. Jenkins Bros., 100 Park Ave., New York 17.

JENKINS VALVES

Sold Through Leading Distributors Everywhere

▲ For more details circle NED-257 M9 on enclosed inquiry slip ▲

# NEW
## FAS-LOK STORAGE RACK

- ONLY 2 BASIC PARTS . . . QUICK ERECTION
- NO WEDGES . . . NO BOLTS, NUTS, OR TOOLS REQUIRED
- SAFE . . . RUGGED . . . COMPLETELY ADJUSTABLE
- Easy access — front or rear.

FAS-LOK Racks can be quickly assembled into unlimited combinations of height, length, and shelf opening. Rigidly braced end frames, in standard heights from 5′ to 22′ 6″, have slots punched in uprights on 3″ centers. Horizontal runners have hookplates at each end. Each hookplate has two tapered ears which fit slots of upright (inset). To assemble FAS-LOK Racks, ears are set into the wedge-shaped slots on upright and a tap on horizontal runner drives ears down, seating them securely in a wedging action to produce a rock-solid rack. Can be used to store any material—Pallets, Skids, Rolls, Bulk storage, etc.

Horizontal runners available in lengths to 20 ft.; End Frames in depths from 2′ to 5′. End Frames made in capacities to 40,000 lbs. *Write for Catalog*

**CHICAGO TRAMRAIL CORPORATION**
1310 S. KOSTNER AVENUE, CHICAGO 23, ILLINOIS

For more details circle NED-258 M9 on enclosed inquiry slip

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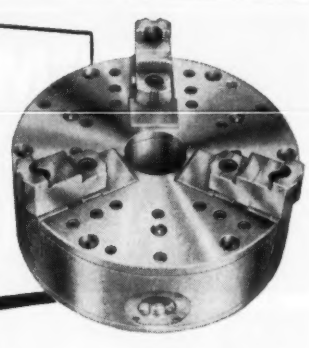
THE FIRST MAJOR CHUCK DEVELOPMENT *in 50 years*



• This radically different chuck combines all the desirable features of hand and power chucks. It has accuracy within .001 TIR, repeatability within .0005 TIR, unequalled gripping power, and no size limitation.

This major chuck development is a principle untilizing combination of pinion, gear plate, screw and wedge. The lug-type pinion is turned manually or by a power wrench. A pinion engages the gear plate causing the screw to move the wedge. The action of the screw on the wedge controls the chuck jaws. The force of the wedge on the jaws holds the work with tremendous power.

In-addition to this unique, new principle, this chuck offers such features as over-tightening protection, operator protection, higher speeds, center-hole chucking and many more. For details, write us at the address below, Department 56D.

**SKINNERCHUCKS**
THE CREST OF QUALITY — THE SKINNER CHUCK COMPANY • NEW BRITAIN, CONNECTICUT

For more details circle NED-259 M9 on enclosed inquiry slip

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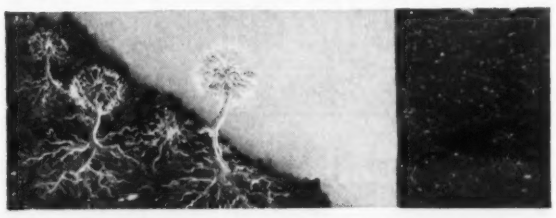
MOSINEE MAKES MAGIC WITH PAPER



*NeverMold 101 Papers—defy fungal attacks!*

- Ideal for packaging products shipped or stored in humid or tropical climates.
- Has highest fungicidal activity of any mold-resistant paper.
- Permanently effective . . . not affected by extreme climate conditions.
- Extremely low toxicity . . . treated with fungicides approved by government agencies for many uses where intimate skin contact is required.
- Ideal for bags, barrier materials, ground coverings, crop mulching, military packaging and wrappings, etc.
- Uniform quality—from roll to roll . . . carload to carload.

FREE **DATA FILE**

Write Dept. NED-12.
**MOSINEE**
PAPER MILLS COMPANY
Mosinee, Wisconsin

For more details circle NED-260 M9 on enclosed inquiry slip

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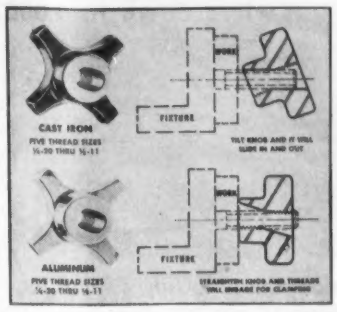
## HAND KNOBS
### offered in cast iron, aluminum




Quick-acting hand knobs are tilted for sliding in or out, then straightened to engage their threads for clamping. The cross-sectional diagrams show its operation. Made of aluminum or cast iron, the knobs are made in 1, 1½, 2, 2½, and 3 in. OD with thread sizes of ¼-20, 5/16-18, ⅜-16, ½-13, and ⅝-11, respectively. Maximum load for cast iron knobs ranges from 1200 to 10,100 lb and from 800 to 5800 lb for aluminum knobs. Made by **Northwestern Tools, Inc.**, 127 Hollier Ave., Dayton 3, Ohio.

For more details circle NED-261 M9 on enclosed inquiry slip

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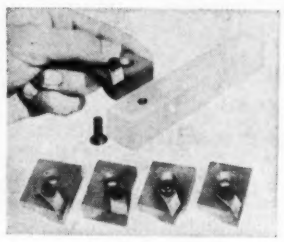
## DISPOSABLE TOOL HOLDER
### can be discarded if damaged



This Ends disposable tool holder for throw-away carbide tips is attached to a conventional shank by a single screw. If damaged, only the disposable end is discarded. Ends are made for every standard lead angle, to 0.003-in. tolerances. All are interchangeable on the same shank. End-O-Cut tool holders are suitable for both cast iron and more difficult turning and facing operations. They utilize a throw-away carbide chip-breaker. Made by **Ends Co.**, 515 Luett Ave., Indianapolis, Ind.

For more details circle NED-262 M9 on enclosed inquiry slip

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## PNEUMATIC TEMPERATURE CONTROL
### for up to 2000° F operations

Differential expansion type Model OA temperature controller is suitable for operation at temperatures up to 2000° F. Essentially a temperature transmitter, it provides air pressure proportional to temperature and is used for direct operation of diaphragm valves, motors, dampers, or similar equipment. Unit features a weathertight and dust-tight aluminum housing, choice of mounting fittings, and simple bleed type pilot valve. Made by **Burling Instrument Co.**, 16 River Rd., Chatham, N. J.

For more details circle NED-263 M9 on enclosed inquiry slip

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MOSINEE MAKES MAGIC WITH PAPER

*Char Test favors MOSINEE Flame-Resistant Papers*

- Mosinee flame-resistant papers consistently test less than the minimum requirements of 4½″ char when subjected to U.S. government specification test methods.
- Special flame-resistant process, developed by Mosinee laboratories, can be applied to many of our papers.
- Ideal for paint arrestors, furnace filters, insulation, drop cloths, covers for stored goods, and packing and wrapping papers.
- Quality is always the same—from roll to roll . . . from carload to carload.

FREE **DATA FILE**

Write Dept. NED-12.
**MOSINEE**
PAPER MILLS COMPANY
Mosinee, Wisconsin

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**Genuine ALLENs for your king-size holding jobs now available from stock!**

**1¼″ and 1½″ sizes are standard**

Rugged, king-size Allens are ready for your toughest holding jobs. These big boys are *genuine* Allens, from heads to fast-starting Leader Points. Pressur-formd to preserve long fibers. Highly accurate threads. 1¼″ and 1½″ diameters from stock — larger diameters are available on special order.

**The cost of Allen Hex-Socket Cap Screws is only a minor fraction of your assembly costs . . . be sure you're getting the time-saving, cost saving advantages of genuine Allens!**

Stocked and sold by leading industrial distributors everywhere

**ALLEN** MANUFACTURING COMPANY
Hartford 1, Connecticut, U.S.A.
ALLEN HEAD

For more details circle NED-265 M9 on enclosed inquiry slip

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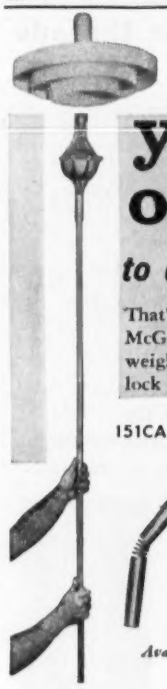
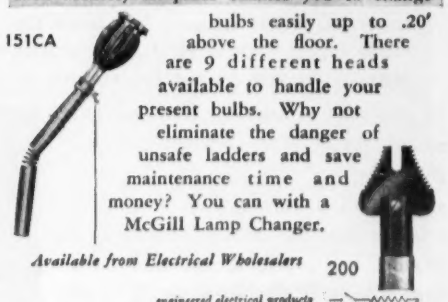


# keep your feet on the floor
## *to change bulbs in safety*

That's exactly how you change bulbs with McGills Adaptable Lamp Changer, for a light weight insulated steel pole in 5′ sections that lock securely in place enables you to change bulbs easily up to .20′ above the floor. There are 9 different heads available to handle your present bulbs. Why not eliminate the danger of unsafe ladders and save maintenance time and money? You can with a McGill Lamp Changer.




*Available from Electrical Wholesalers*

*Write for McGILL catalog No. 84*

engineered electrical products
**McGILL**
precision needle roller bearings

McGILL MFG. CO., INC., Electrical Div., 151 N. Campbell St., Valparaiso, Ind.

For more details circle NED-266 M9 on enclosed inquiry slip

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MOSINEE MAKES MAGIC WITH PAPER

*MOSINEE Seven-O-neutral papers for metal wrapping*

- Chemically inert, noncorroding on contact—flat or creped.
- For interleaving metals and wrapping aircraft, automotive, electronic, missile components, etc.
- Effective as an intimate wrap for steel, copper, nickel, tungsten, aluminum, silver, brass, manganese, zinc, cadmium and other metals.
- Ideal for packaging products for long-term storage and overseas shipments.
- Meets requirements under Military Specification MIL-P-17667A.
- Uniform quality—from roll to roll . . . from carload to carload.

FREE **DATA FILE**

Write Dept. NED-12.
**MOSINEE**
PAPER MILLS COMPANY
Mosinee, Wisconsin

For more details circle NED-267 M9 on enclosed inquiry slip

# THE VER-T-RACK

**THE ACME OF VERSATILITY**

- ELIMINATES MATERIAL DAMAGE
- REDUCES WORKER FATIGUE
- MAXIMUM EFFICIENCY AT MINIMUM COST

HEIGHT—65½" LENGTH — 35"
WIDTH — 24" CAPACITY 2000 lbs.

- EXPEDITES MATERIALS UP TO 60% FASTER
- SAVES MAN HOURS
- SAVES FLOOR SPACE
- GREATER SAFETY FACTOR

Equipped with 6" roller bearing steel wheel casters

**VER-T-RACK** can be handled with lift truck.
Trays are adjustable on **VER-T-RACK**

**PRICE — $49.50** Varied Accessories Extra

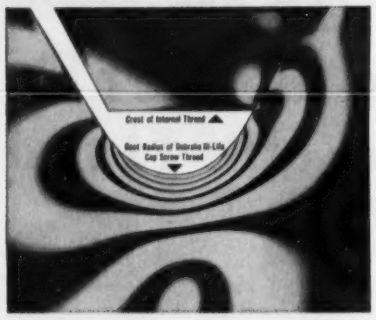
Slightly higher west of the Rockies Write today for descriptive literature

THE Vince BASNIK COMPANY
MATERIAL HANDLING DIVISION
2020 CENTER STREET • CLEVELAND 13, OHIO

▲ For more details circle NED-268 M9 on enclosed inquiry slip ▲



## The big change is in the threads




STRESSES ARE DISTRIBUTED Photoelastic study shows the thread root form of the new UNBRAKO Hi-Life socket head cap screw. Larger radius reduces stress concentration and increases fastener fatigue life.

**High-strength thread root available to industrial users for first time on new UNBRAKO Hi-Life socket head cap screws at no increase in cost**

Radiused thread root boosts fatigue life as much as 100%, increases tensile strength. Developed by SPS research on high-strength fasteners, this new thread design provides assurance of longer life for your product. Ask your SPS distributor for a copy of Bulletin 2577. Or write:

INDUSTRIAL FASTENER Division SPS
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-269 M9 on enclosed inquiry slip ▲



# LOW COST Copying Method

*Only "Thermo-Fax" Copying Machines do so many jobs... so quickly, so easily, for such low cost!*

So fast and easy that *anyone* can copy needed information in just 4 seconds. So versatile that many also use this machine for billing, accounting, addressing and labeling. To learn how "Thermo-Fax" Copying Machines can speed your work systems at low cost, call your local dealer. Or mail the coupon.

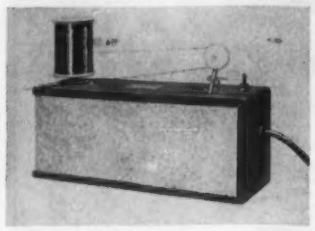
MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

Minnesota Mining and Manufacturing Company
Dept. DBQ-129, St. Paul 6, Minnesota
Name_____
Company_____
Address_____
City_____ Zone____ State____

Thermo-Fax 3M THE TERM "THERMO-FAX" IS A REGISTERED TRADEMARK OF MINNESOTA MINING AND MANUFACTURING COMPANY

▲ For more details circle NED-270 M9 on enclosed inquiry slip ▲


## SPOOLING TENSION CONTROL for pay-off spooling of fine wires down to 0.00028 in. diameter



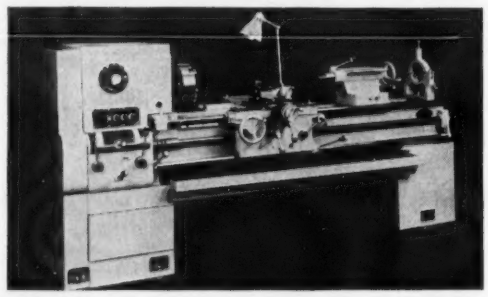
Constant predetermined tension, with negligible error, is maintained on fine gage wire through a wide range of speeds during pay-off spooling operations by the No. 510-A-116 Auto - Tension control. Unit is suited for unspooling of wire for winding electron tube grids, resistors, solenoids, and transformers. It handles No. 60 gage (0.00028 in. diameter) lateral grid wire at a tension of 3 grams.

Control unit has a variable transformer regulated by sensing device to change voltage output to the control phase of the motor, thereby applying the required torque to correct any changes in tension. Rated 5/10 w with power input of 115 v single-phase ac, the unit has tension range from 1.5 to 140 grams with winding speeds from 0 to 1000 fpm. Spool sizes up to 4½ in. maximum OD can be accommodated. Made by **Diehl Mfg. Co.**, 1201 Finderne St., Somerville, N. J.

▲ For more details circle NED-271 M9 on enclosed inquiry slip ▲

## GEARED-HEAD LATHES have hydraulic speed shift plus 48 threads and feeds

Super-high speed range with a top speed of 3000 rpm provides the Hydrashift line of geared-head lathes with surface speeds capable of handling carbide and ce-



ramic tooling. Spindle speeds are changed by rotating the power speed selection dial to the desired speed. Shifting is done hydraulically and automatically. The quick-change feed selection provides 48 threads and feeds. The "quick clamp" tailstock is secured by a single lever, and the wide, heavy compound and cross slide will handle heavy, high speed cuts.

Additional features are coded pushbutton controls, sliding chip pan, and tray tops on headstock and tailstock. Lathes are offered in 10, 12½, 15, and 18-in. swing sizes in a variety of bed lengths. The 15 and 18-in. swing sizes can be equipped with Hydraguide tracers. Made by **Cincinnati Lathe & Tool Co.**, 3207 Disney St., Cincinnati 9, Ohio.

▲ For more details circle NED-272 M9 on enclosed inquiry slip ▲


Jiffy's durable cushioning absorbs shocks & impacts

JIFFY PADDED SHIPPING BAGS CAN TAKE IT! The resilient cushioning returns gently after each impact—never flattens out.

The outer liner of all standard Jiffy Bags is made of 70 lb. CLUPAK paper, the kraft with built-in stretch. Its extra toughness makes Jiffy Bags twice as strong as bags made with ordinary kraft.

Test the very best.
Write today for your free samples.

Jiffy MANUFACTURING COMPANY
HILLSIDE NEW JERSEY

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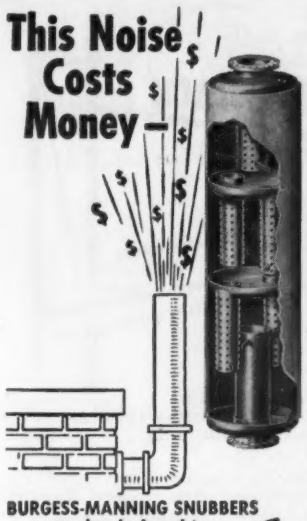
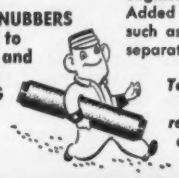
# This Noise Costs Money — STOP IT!



Excessive exhaust or intake noise takes its toll in jangled nerves, misunderstood verbal orders, loss of efficiency, neighborhood complaints, and impaired hearing claims.

Burgess-Manning Industrial Silencers eliminate excessive noise from internal combustion engines, blowers, and turbines. Added functions are available such as spark arresting, water separation and heat recovery.

BURGESS-MANNING SNUBBERS are also designed to STOP PULSATION and VIBRATION in CLOSED GAS PIPING SYSTEMS.



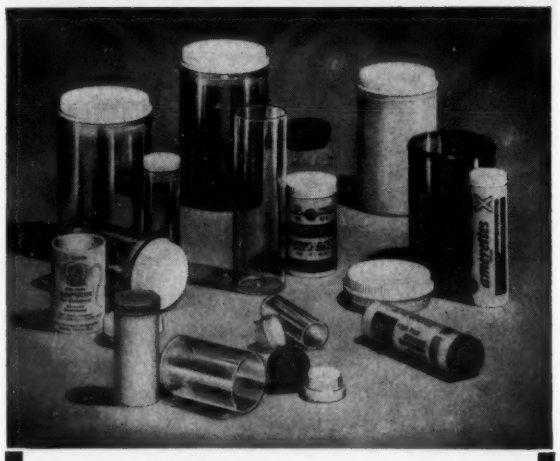
*Tell us your problem— we will gladly recommend a solution and send literature!*

BURGESS-MANNING COMPANY
Sound Engineering *Industrial Silencer Division*
9227 Sovereign Row, Dallas, Texas
Libertyville, Ill.

▲ For more details circle NED-274 M9 on enclosed inquiry slip ▲



# LERMER PLASTIC CONTAINERS



## Exceptional printing makes the difference...

*Helps make the sale!*

- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
- Lightweight and shatterproof—with rigid wall protection
- Economical—with customer re-use value
- Also made of new high density polyethylene—Poly-Opal*. Are chemically inert, stain resistant and have lower permeability to moisture and gases than conventional polyethylene.

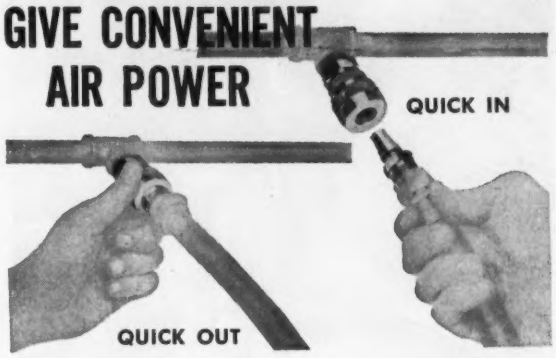
*T. M.

*Write for full-color catalog, samples and prices.*

**LERMER PLASTICS, INC.**
514 South Avenue
Garwood, New Jersey
PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

▲ For more details circle NED-275 M9 on enclosed inquiry slip ▲

# QUICK-ACTING COUPLERS GIVE CONVENIENT AIR POWER




Save time and trouble by plugging in your air tools close to the work. A simple push locks air line in place, automatically starts air flowing. Swivel action prevents hose kinking. Line cannot be accidentally uncoupled—it requires a definite twist on the sleeve. Uncoupling automatically shuts off air. Available in many sizes of check units and adapters, male and female threaded, heavy duty and standard. Place them conveniently along walls, benches or columns for best use of your air tools. **Send for full details in informative literature today.**

Schrader®

**A. SCHRADER'S SON**
*Division of Scovill Manufacturing Company, Inc.*
459 Vanderbilt Ave., Brooklyn 38, N. Y.

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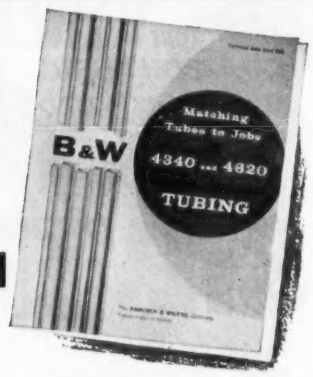
# NEW BULLETIN 4340, 4620 Alloy Steel Tubing




This 6-page booklet describes production economies provided by two popular grades of alloy steel tubing — 4340 and 4620 . . . the WHEN and WHERE of its use. It has helpful tables on Thermal Treatment; technical data on Carburizing, Machinability, Alloy Effect; plus a check list of tips on ordering mechanical tubing. Write for Bulletin TDC-193 NOW. Address: The Babcock & Wilcox Company, Tubular Products Division, Beaver Falls, Pa.

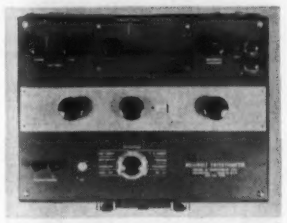
B&W THE BABCOCK & WILCOX COMPANY
*TUBULAR PRODUCTS DIVISION*

TA-9012-SML3

**Seamless and welded tubular products, solid extrusions, seamless welding fittings and forged steel flanges—in carbon, alloy and stainless steels and special metals.**

▲ For more details circle **NED-277 M9** on enclosed inquiry slip ▲

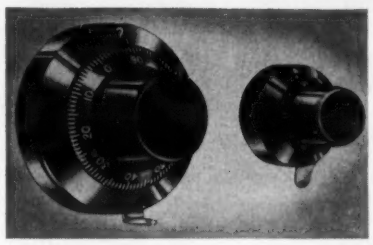
## MILLIVOLT POTENTIOMETER
### has wide range with minimum error



Measuring temperatures with base or noble metal thermocouples, calibrating millivoltmeters, potentiometer indicators, recorders, and controllers, checking recorders and controllers "on the line," and checking temperatures at vital points in a process are applications for the Model 8686 portable millivolt potentiometer. Measured value appears in a central reading window as a single row of digits, plus a scale interpolation. Range is −10.1 to 100.1 mv. An additional range of +1010 to 1020 mv rapidly checks standard cells. Small measured voltage fluctuations are followed rapidly. Made by **Leeds & Northrup Co.**, 4934 Stenton Ave., Philadelphia 44, Pa.

▲ For more details circle **NED-279 M9** on enclosed inquiry slip ▲

## TURN INDICATING DIALS
### one number shows in total window

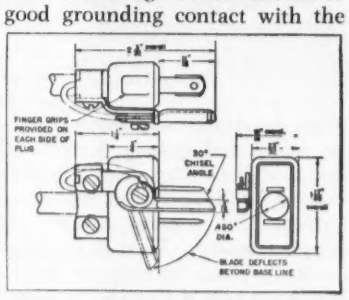


Error-free readings of full potentiometer turns are provided by two 10 - turn indicating dials. Only one number appears in the turns totaling window as each turn is completed. Calibrated dials register partial turns in increments of 1/100. Model 10 Multidial has a 1-in. diameter and Model 20, a 1 13/16-in. diameter. Both fit 0.250-in. shafts or 0.125-in. shafts with an adapter bushing. Made by **Spectrol Electronics Corp.**, 1704 S. Del Mar Ave., San Gabriel, Calif.

▲ For more details circle **NED-280 M9** on enclosed inquiry slip ▲

## SELF-GROUNDING PLUG
### for two or three-hole receptacles

Polarized grounding blade of this self-grounding armored electric plug has a chisel edge which deflects to one side to make a good grounding contact with the faceplate of two-hole receptacles. When inserted in a three-hole receptacle, the blade remains straight, registering with the grounding hole. It cannot be inserted improperly. The N - UP - 121M plug is rated 125 v, 15 amp to 250 v, 10 amp. Made by **A.P.M. Corp.**, 252 Hawthorne Ave., Yonkers, N. Y.

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# JEFFREY RIVETLESS CHAIN
## for general conveying systems, overhead trolleys, scrapers

**STRONG**...without needless bulk weight

**DETACHABLE**...for fast, easy assembly—lower maintenance costs

**ADAPTABLE**...to irregular courses, vertical or horizontal conveyors

**Available in alloy heat-treated steel**

Jeffrey drop forged, heat-treated Rivetless Chain ranges to a maximum ultimate strength of 130,000 lbs. Weight — 9 lbs. per foot. Operates over irregular courses in either vertical or horizontal directions. Links and pins can be reversed when excessive wear is evident, increasing chain life and decreasing maintenance costs. Simplicity of design makes single link or section replacements fast and easy. Jeffrey Rivetless Chain is detachable. Assembly is aided by the cutout portion of center link which allows side bars to be brought together for easy insertion or removal of the pin.

Write for Catalog #899. The Jeffrey Manufacturing Company, 952 North Fourth Street, Columbus 16, Ohio.

JEFFREY

**CONVEYING • PROCESSING • MINING EQUIPMENT**
**...TRANSMISSION MACHINERY...CONTRACT MANUFACTURING**

▲ For more details circle **NED-282 M9** on enclosed inquiry slip ▲

New STEEL GUARD Industrial Pneumatic Tire from Goodyear—a rugged performer from any angle!

# NEW PERSPECTIVE ON "PNEUMATICS"

This unusual photo illustrates—in a striking way—*three important points* about the amazing new STEEL GUARD Tire that may well change your entire viewpoint on pneumatic industrial tires:

❶ Notice how the STEEL GUARD rolls right over sharp objects that would puncture other tires. The reason: a rubber-embedded *barrier of steel cables* locked firmly in place between plies—even reaching across the shoulders of the tire.

❷ Next, look at the rugged lugs on this STEEL GUARD. They provide extra traction and impact resistance on roughest surfaces.

❸ Look now at the sidewall of this STEEL GUARD. Yes, this is a *pneumatic* tire with all the smoothness, stability and flotation of the finest pneumatic tires — yet able to operate in areas where tires of this type failed prematurely before.

Why not let your Goodyear Dealer give you a new slant on pneumatic industrials — and STEEL GUARD — today. Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

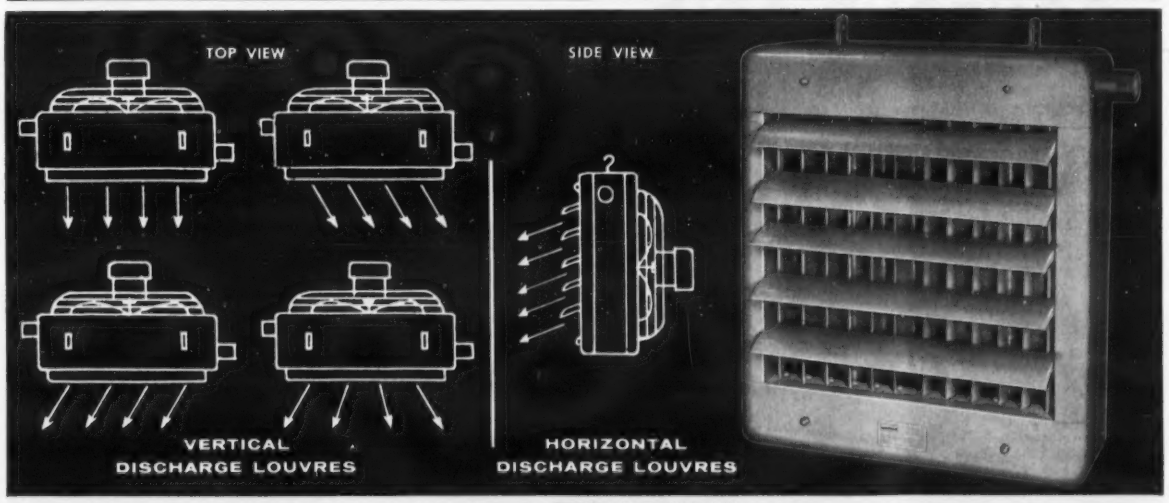
**INDUSTRIAL TIRES BY**

**GOODYEAR**

***More tons are hauled on Goodyear Truck Tires than on any other kind***

Steel Guard—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

▲ For more details circle **NED-283 M9** on enclosed inquiry slip ▲




# YOU'RE LOOKING AT THE NEW DUNHAM-BUSH TYPE "H" UNIT HEATER THAT CONTROLS BOTH HEAT SPREAD AND THROW

Arrangement of both horizontal and vertical discharge louvres (standard equipment—no extra cost) in these new unit heaters affords efficient control of both heat spread and distance of throw. This dual control effects extra efficiency and extra economy required in factories, commercial and institutional buildings. The new Dunham-Bush Type "H" Unit Heaters are designed for either steam or hot water systems. Capacity range from 65 to 1200 EDR. Working pressures up to 150 psi. Long life is assured with aluminum heating element fins. Motors are sleeve bearing—single and three phase.

**SEND FOR FILE NO. 1306C**

**DUNHAM-BUSH, INC.**
**WEST HARTFORD 10 • CONNECTICUT • U.S.A.**

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## TO CUT PRODUCTION COSTS

You save money every time you handle parts with Nestier Boxes and Baskets. They stack when full, nest when empty. You need no racks, waste no storage space, require no other containers even for degreasing. Nestier units travel in stacks on pallets, conveyors or moving belts. Tiered on work tables or hung from Hopper Racks they put parts in easy reach of your assemblers. Nestiers are die-cut from sheet steel in 5 sizes, 12" to 36" long. Write for information today. Dept. D-12

NESTIER — FIRST IN SMALL PARTS HANDLING

**NESTIER CORPORATION** Subsidiary of THE METAL SPECIALTY CO.
4519 Este Ave., Cincinnati 32, Ohio

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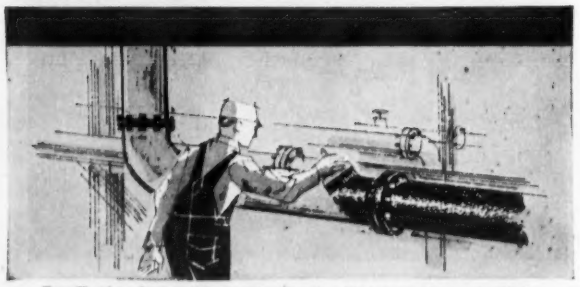
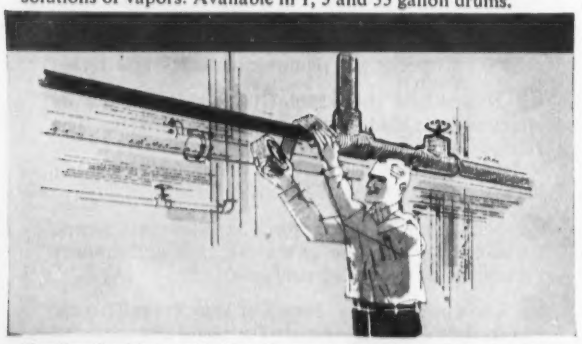
## END ALL DRIP AND RUST PROBLEMS IN YOUR PLANT THESE TWO PROVEN WAYS!

Industrial plants know Mortell products offer more positive protection than any other drip-and-rust preventive. Maintenance men know that paints or compounds of paint and fish oil provide little or no permanent protection. Rust-inhibiting NoDrip Plastic Coating is a moisture-proof insulation that *does* stop condensation . . . forms a seamless jacket . . . *does* stop corrosion. NoDrip Tape, with its triple insulating barrier, is equally dependable.



**For Tanks, Large Pipes, Air Ducts, Metal Equipment, Walls, Ceilings, Permanently End Condensation Drip, Rust and Corrosion With NoDRIP PLASTIC COATING**

The heavy consistency of NoDrip outlasts many coats of paint or ordinary rust-preventives. Permanently insulates and protects. Applies easily with trowel, brush or special spray. Non-toxic, odorless and non-flammable. Resists acid, alkali, brine solutions or vapors. Available in 1, 5 and 55 gallon drums.



**For Smaller Pipes or Tubing, Permanently End Condensation Drip, Rust and Corrosion With NoDRIP TAPE**

An easy-to-use, wrap-around pipe covering, perfectly pliable, cork-filled, completely self-adhering. Forms an air-tight, 100% vapor- and moisture-proof jacket. Fits snugly even around tees, unions, angles, valves. Cuts maintenance costs—makes out-of-the-way storage areas useable—ends slip and slide floor hazards. No need for vapor seals, brads, fasteners or tools of any kind.

*At all leading hardware, mill supply and plumbing jobbers. For complete information and technical handbook, write*

**Mortell COMPANY**
526 Burch Street · Kankakee, Illinois

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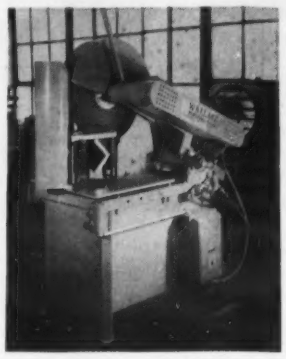
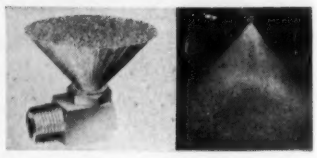
## CUTOFF MACHINE with 16, 18, 20, 26-in. wheels



Up to 8 x 8-in. 69-lb wide flange beams, 8-in. extra heavy pipe, and 5-in. round and 4-in. square solid bars can be cut by the Wallace modular Cut-Machining unit. Its 16, 18, 20, and 26-in. diameter cutoff wheels provide a 30 to 70 micro-inch finish on all cut surfaces. Machine is equipped with an operator shield, wheel guard, telescoping dust spark chute, and duplex air-operated clamping bar. A foot-operated hydraulic pump-foot pedal can be substituted for the air-operated clamp. Power feed and air clamping are automatic. Made by **Wallace Supplies Mfg. Co.**, 1304 Diversey Parkway, Chicago 14, Ill.

▲ For more details circle NED-286 M9 on enclosed inquiry slip ▲

## INDUSTRIAL SPRAY NOZZLE in 0.50 to 10-gpm capacities



Uniform distribution and atomization are assured throughout solid-cone spray of these Tan - Jet centrifugal type industrial spray nozzles. Offered in 1/4, 3/8, and 1/2-in. sizes with male or female connections, nozzles provide capacities from 0.50 to 10 gpm at 40 psi pressure. Typical uses include industrial washing, cooling, brine spraying, foam and dust control, and many chemical processes. Body, removable cap, and internal member are brass, steel, 303 stainless, or other materials. Made by **Wm. Steinen Mfg. Co.**, 43 Bruen St., Newark, N. J.

▲ For more details circle NED-287 M9 on enclosed inquiry slip ▲

## TRANSFER SWITCH acceleration tested to 20,000 g

Highly reliable, low-energy transfer switch for positive one-time operation weighs 4 grams and is acceleration tested for 20,000 g for 5 sec minimum duration. Applications include remote switching for safety and arming devices, self-destruction switching, and R-C time delay circuits. Switch motor consists of totally enclosed explosive charge which, when ignited, displaces the contact assembly by a dimple popping action. Unit has temperature range of −65 to 160° F and operates in from 1 to 8 milliseconds. Made by **Lionel Corp.**, 28 Sager Place, Irvington 11, N. J.

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## CONTOUR GRIP

### Set up any job in seconds

*then take deeper cuts, faster feeds*

Makes any tool more productive. Here's why:

Contour Grip is a standard fixture that holds any irregularly shaped part so tightly that you can feed faster and take deeper cuts. Use any type tool, eliminate need for costly special-purpose jigs and fixtures. Your operator sets up Contour Grip in seconds, then goes from piece to piece just by backing off the jaws, dropping the next piece in and tightening up. For long runs or short.

The secret of Contour Grip's strength is its individual steel fingers, each of which moves independently as it contacts the work. The fingers mold around the part, and then tighten up giving greater holding power and a more positive grip than any ordinary fixture can.

To learn how Contour Grip works and to see the various models available, see your local dealer or contact us direct we'll be glad to send our latest bulletin.

**dieco** DIE SETS

**E. W. BLISS COMPANY**
DIE SUPPLY DIVISION
1400 Brookpark Road
Cleveland, Ohio

Available in Canada through John Bertram & Sons, Ltd., Dundas, Ontario.

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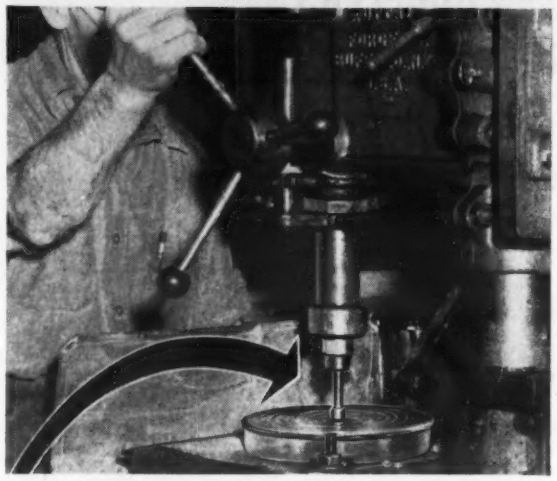
## One Hoffman Bit Drills Up to 15,000 Godet Wheels With No Downtime



**Up to 15,000 Godet Wheels drilled with center hole tolerance 1.5 min. to 1.53 max.—with one Hoffman Laboratory Bit. Actual production figures that are being duplicated by many Hoffman Bit users for precision drilling of glass, ceramics, quartz, etc. Diamond impregnated or oriented surface set.**

*Write for Illustrated Literature and Prices—FREE*

**HOFFMAN BROS. DRILLING CO.**
SINCE 1902
106 Cedar Street PUNXSUTAWNEY, PENNA.

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*the finest COATED FABRIC WORK GLOVE in the world*

SURETY **SILVERTEX**

To handle those hot, tough jobs nothing equals Surety Silvertex Gloves for longer wear and lower cost. Superior Silvertex coating reflects heat and affords better protection against most industrial chemicals than rubber and standard synthetics. Their curved finger design and wing thumb construction cuts wear and gives greater comfort. And they won't crack or peel—remaining soft and pliable for the life of the glove.

Available in gauntlet, knit wrist, band top and safety cuff styles, all in jumbo sizes and with or without ventilated backs. For a free test pair write on your letterhead, outlining your job requirements. We'll send them to you by return mail.

THE SURETY RUBBER COMPANY Dept. N
CARROLLTON, OHIO

In Canada: Safety Supply Co., Toronto

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*positive filtration*

*(to 1/2 Micron) for as little as*

*.00015¢ per gallon!*

*And it's completely automatic!*

Now, from Olson, the first completely automatic, pressure-type filter! Every cycle—precoat, run, backwash—is automatically controlled. Injection of filter-aid (when used) and sludge carry-out are also automatic.

Maintenance is virtually eliminated in this trouble-free system. No parts to change, no elements to replace, and most important, no costly downtime for cleaning!

In large central systems, or with individual machines, Olson Filters guarantee over 96% purification of all types of coolants at the lowest cost per gallon.

Write for free catalog on the new Olson automatic pressure-type filter which describes the 8 standard models from 10 gpm to 600 gpm capacities.

OLSON FILTRATION ENGINEERS
*Division of The American Laundry Machinery Company*
CINCINNATI 12, OHIO

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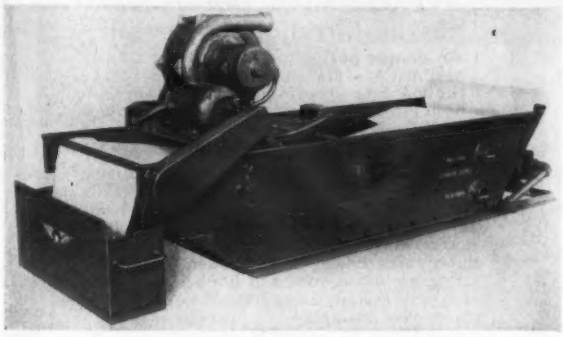
## HOW NEW VACU-MATIC FILTERS FOR MACHINE TOOLS HELP YOU INCREASE PRODUCTION AND CUT COSTS

Employing a new vacuum method, the compact, revolutionary Hoffman Vacu-Matic Filter provides unusually high



flow rates in continuous filtration of machine tool water soluble coolants. Filter medium is an easily replenished paper on which solid particles are deposited. Coolant is drawn through the filtering paper by negative pressure with the dry sludge remaining on top of the paper. When sludge reaches a pre-set thickness, the filter paper is automatically indexed by a pressure differential switch and new paper moved over the vacuum area. Water-free sludge and filter paper drop off into the removable tote box for easy disposal. *Coolant loss is minimized . . . rejects reduced . . . down time eliminated . . . bacterial growth curtailed . . . production schedules maintained.* Ask for bulletin FB-103 — **U. S. Hoffman Machinery Corp., Thompson Road Plant #1, Syracuse, N. Y.**

▲ For more details circle **NED-293 M9** on enclosed inquiry slip ▲

## VIBRA-WASHER

**. . . THE COMPLETELY NEW AUTOMATIC PARTS WASHER AND METAL CONDITIONING MACHINE**

- **Labor saving**
- **Automatic unloading**
- **For single or multi-stage operations**
- **No nesting of parts during cleaning or conditioning cycle**
- **Adjustable capacities to 10,000 lbs. per hour**

The versatile new Simplicity VIBRA-WASHER, revolutionary machine for washing and conditioning of small metal parts, stampings and castings, employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning bath. Solution is forced around parts, even into blind drillings and slots. In single stage, VIBRA-WASHER removes chips, oil and grease quickly . . . economically. In multi-stage, several units in line will provide cleaning, rinsing and phosphating, eliminating "between-stage" handling. Write today for Bulletin 107, to: Industrial Washer Division.

**Simplicity** TRADE MARK REGISTERED

212 ENGINEERING COMPANY • DURAND 15, MICH.

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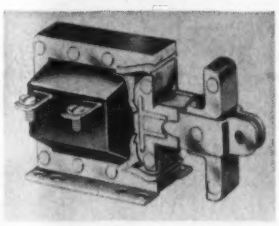
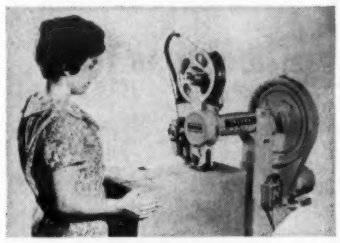
## DOUBLE-T SOLENOIDS
### assures level pull characteristics



Double - T plunger construction of Series 801 solenoids assures level pull throughout useful plunger stroke. Coils are encapsulated in epoxy resin for protection against moisture, water, machine oils, diluted acids, and alkalies. Four sizes with strokes from 5/8 to 1 3/8 in. are available in the series which offers 12 sets of electrical characteristics to meet application requirements. Each is available for constant or intermittent duty, 110 or 220-v ac. Made by **Controls Co. of America,** Industrial & Commercial Controls Div., 9555 Soreng Ave., Schiller Park, Ill.

▲ For more details circle **NED-296 M9** on enclosed inquiry slip ▲

## WIDE-CROWN STAPLER
### forms staples from coiled wire



Single or double-wall A, B, or C-flute corrugated and fiber board can be stapled by the electrically driven Speed-Stitcher which forms staples with crowns up to 1 3/8 in. wide. Spools containing 25-lb coils of galvanized or copper finish wire make 12,500 staples without reloading. Staples comply with domestic and overseas shipping requirements. Machine is offered with 12 or 20-in. throat in bottomer, straight arm, thin blade, and combination models. Made by **Inland Wire Products Co.,** 3947 S. Lowe Ave., Chicago 9, Ill.

▲ For more details circle **NED-297 M9** on enclosed inquiry slip ▲

## RUBBER & NEOPRENE GLOVES
### long wearing and snag resistant

Unsupported gloves of natural rubber or neoprene latex have high strength, long wearing and snag resistant qualities, and are impervious to penetration. Canner's type has palm and finger with a molded, corrugated surface for good gripping. A chlorinated finish eases putting on and taking off and lanolizing prevents hand chapping. Made in an 11-in. length in amber, glove is offered in sizes from 7 to 10. Lightweight, flexible Combination glove combines flexibility of natural rubber on the inside and oil-resistant qualities of neoprene on the outside. It is 12 in. long, black, and is offered in sizes from 7 to 10½. Made by **B. F. Goodrich Co.,** Hood Rubber Products Div., 98 Nichols Ave., Watertown 72, Mass.

▲ For more details circle **NED-298 M9** on enclosed inquiry slip ▲

## REVCO Sub-Zero Chests

- **for shrink fits**
- **for seasoning gauges and tools**
- **for testing • for research**
- **for processing *to −140°***

Model RSZ503 Rivet Cooler (shown) equipped with 90 rivet canisters, temperatures to −30° F. 110V, 60 cycle, single phase.

Model SZH153 with temperatures to −95° F. 110V; 60 cycle, single phase.

Model SZH653, larger capacity, temperatures to −85° F. 110V, 60 cycle, single phase.

Model SZHC657. Same capacity as SZH653 but attains temperature as low as −140° F. 220V, 60 cycle, single phase.

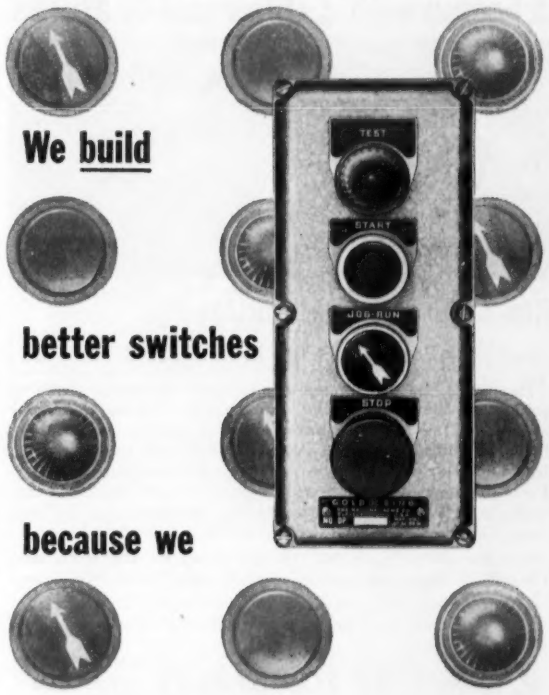
*Refrigeration:* Model SZHC657 operates with 3 Tecumseh hermetic compressors in a two system cascade. Other Sub-Zeros use 2 hermetics in a two stage system. Rivet Cooler operates with single hermetic unit. All models equipped with efficient fan-cooled condensers — no liquid coolant required. *Write Today for Full Specifications and Prices.*

| Description | Model | Cu.Ft. | Temp. Range | | Outside Dim. | | | Inside Dim. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rm. 70° | Rm. 110° | L | W | H | L | W | H |
| Sub-Zero | SZH153 | 1.5 | −95° F. | −85° F. | 42" | 28" | 42¼" | 23" | 9" | 12½" |
| Sub-Zero | SZH653 | 6.5 | −85° F. | −75° F. | 60" | 28" | 42¼" | 47" | 15" | 16" |
| Sub-Zero | SZHC657 | 6.5 | −140° F. | −125° F. | 60" | 28" | 42¼" | 47" | 15" | 16" |
| Rivet Cooler | RSZ503 | 5.0 | −30° F. | −20° F. | 42" | 28" | 41" | 30" | 16" | 18" |

**REVCO, Inc.**

**Setting Trends in Refrigeration since 1938** **Deerfield, Michigan**

▲ For more details circle **NED-299 M9** on enclosed inquiry slip ▲




***It's as simple as that... and they cost no more than other switches***

We had to build Gold-N-Ring Control Switches to meet our own high reliability specifications . . . our reputation was a part of this important fact. We're machine tool builders. We can't afford to be responsible for costly down-time on important capital investment equipment due to inferior control switches. That's why we build them like precise machine tools . . . and why it will pay you to check with us.

A wide range of basic units meets practically every need . . . as well as completely assembled stations in 1 to 4 button sizes to meet your electrical specifications. Ask our representative to call, or send for Bulletin ECS-56 . . . the complete selection and ordering guide.

◀ **Limit Switches.** A full line, used wherever the highest reliability factors are required. Bulletin EM-51.

**Solenoids.** A full line of standard and custom units for AC or DC. Bulletin EM-52A. ▶

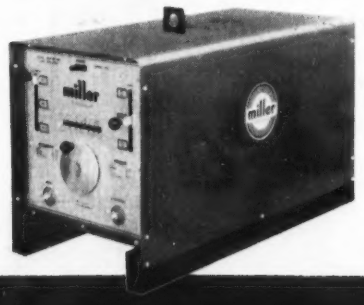
ELECTRICAL MANUFACTURING DIVISION

**National Acme**

THE NATIONAL ACME COMPANY
182 E. 131 st STREET
CLEVELAND 8, OHIO

▲ For more details circle **NED-300 M9** on enclosed inquiry slip ▲

**miller WELDERS**



BIG TWIN 250 AC/DC

LITTLE TWIN 180 AC/DC

### AND BOTH MILLERS . . . *Through and Through*

BIG TWIN combination ac-dc welders work from single phase service — deliver new convenience and economy. Two a-c amperage ranges of 20-125 and 60-290 plus two d-c ranges of 18-100 and 65-290 amps master nearly every welding requirement from light gauge metal to structural pieces. Movable shunt type transformer affords infinite current adjustments. Other features include: Horizontal design for easy stacking; weather-resistant construction and Class B insulation; Miller-built semi-metallic rectifier for best d-c welding; high open circuit voltages and new weld stabilizer. This is THE all-time, all-around welder!

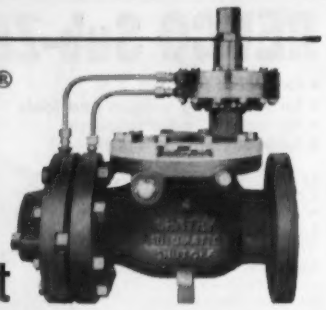
LITTLE TWIN ac-dc combination welder has two a-c amperage ranges of 20-115 and 60-180 plus one d-c range of 40-150. Operating from single phase service, this Miller model incorporates many design and construction features usually found only in large industrial types. These include really rugged construction, forced air cooling, new Miller semi-metallic rectifier, movable shunt type current control, new weld stabilizer and open circuit voltage in abundance. Power factor correction is available on both models. Complete specifications on either model will be sent promptly upon request.

**miller** ELECTRIC MANUFACTURING COMPANY, INC., APPLETON, WISCONSIN

Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal

▲ For more details circle **NED-295 M9** on enclosed inquiry slip ▲

# SENTRY® VALVES



## stop or start full round flow in split second

*Latch-type valve closes instantly!*
*Piston-type valve opens instantly!*

Sentry Valves are used on liquid and gas lines . . . protect property, materials and processing. Sizes 1½" to 8".

Have details on quick, positive action of this remarkable Coppus line at your fingertips. WRITE to COPPUS ENGINEERING CORPORATION, 411 Park Avenue, Worcester 10, Mass.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

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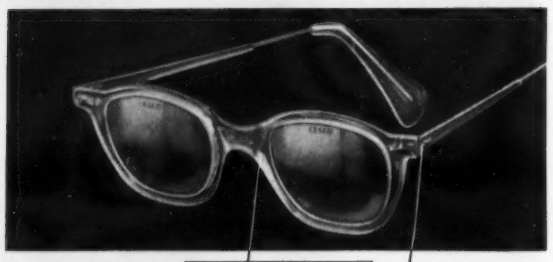
# 1 Frame with 2 Universal Features



**New CESCO Polyfit Bridge and New CESCO Interchangeable Temples**

• New CESCO Polyfit frames have not one but two features to make them adaptable to the widest range of nose and facial contours. New Polyfit frames feature gleaming nickel-silver temples which are interchangeable with other CESCO plastic frame glasses or with most safety glasses equipped with 5-barrel hinges. Tapered temples, fastened with Sur-Loc pins, come in two styles—cable or spatula. Polyfit frames in flesh tone plastic are available with or without side shields.

• Your choice of two sizes: No. 316 (46 x 39mm), No. 318 (48 x 41mm)
• Popular F7 shape lenses are removable for easy "on-the-spot" repair

*Ask your distributor to show the new CESCO Polyfit safety glasses. There's a CESCO distributor in most major cities*

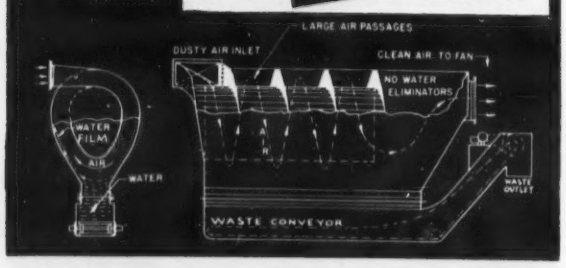
CESCO FOR SAFETY

CHICAGO EYE SHIELD COMPANY
2715 W. Roscoe St., Chicago 18, Illinois

▲ For more details circle NED-302 M9 on enclosed inquiry slip ▲

# The MASTER of DUST in INDUSTRY

IS THE . . . . Air Tumbler




**SIMPLE—DEPENDABLE—NO FIRE HAZARD**
**HIGH EFFICIENCY—CONSTANT CAPACITY**
**LOW HUMIDIFICATION—LOW OPERATING COST**

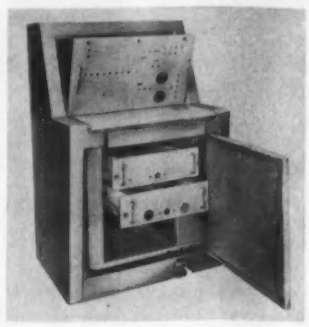
**More than one million CFM in ONE plant**

*Write for Bulletin No. 581. Address:*

**DUST SUPPRESSION & ENGINEERING CO.**
P. O. BOX 67 • LAKE ORION, MICHIGAN

▲ For more details circle NED-303 M9 on enclosed inquiry slip ▲

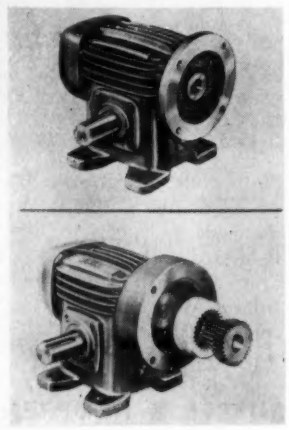

## CONTROL CONSOLE
### standard unit made in three metals



Design of this standardized control console is based on such human factors as fatigue, concentration, easy perception, and safety. It permits proper arrangement of instruments and controls for timesaving and error-free operation. Removable sloping panel can be punched or drilled to specifications, or left blank until instrument layout is determined. Counter top is Formica or Texolite bonded on plywood. Console itself is aluminum, magnesium, or stainless steel. It accommodates a variety of chassis, panels, slides, or other components. Made by **Falstrom Co.**, 302 Falstrom Court, Passaic, N. J.

▲ For more details circle NED-304 M9 on enclosed inquiry slip ▲

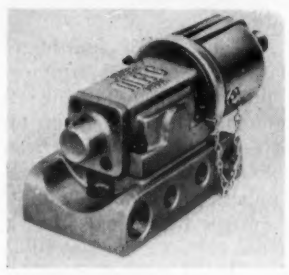
## SPEED REDUCERS
### fin and fan-cooled, 1/16 to 18 hp



Hi-Line fin and fan-cooled speed reducers are available with either of two types of C flanges. One style permits direct connection of motor shaft to reducer's input shaft. The other has a bell-shaped flange which allows enough room for a flexible coupling between drive motor and input shaft. Sizes range from 1.33 to 5.25 in. center distance, and ratings, from 1/16 to 18 hp. Made by **Ohio Gear Co.**, 1400 E. 179th St., Cleveland 10, Ohio.

▲ For more details circle NED-305 M9 on enclosed inquiry slip ▲

## SOLENOID AIR VALVES
### 3 and 4-way, and 4-way 5-port types



All units in this series of single and double-solenoid air valves are equipped with new MAC-solenoids which can be assembled or disassembled without tools. Solenoids are cushioned in rubber and have encapsulated sealed coils with connectors that plug into the valve body. Line includes 3-way, 4-way, and 4-way 5-port types in ¼, ⅜, and ¾-in. sizes. In addition to automatic operation, manual screwdriver or ball-type operators are standard. Valves can be set to locked-in or locked-out position with the control. Add-a-unit manifold type bases are available for ¼-in. models, permitting ganging of 2 to 10 valves with common inlet, exhaust, and conduit channels. Made by **Mechanical Air Controls, Inc.**, 10030 Capital Ave., Detroit 37, Mich.

▲ For more details circle NED-306 M9 on enclosed inquiry slip ▲

## PORTABLE LUBRICATOR
### dispenses grease pneumatically

Carried by a shoulder strap, the self-contained Model 640 - 110 Aro - Pak portable lubricator can be used throughout the plant on any machines equipped with hydraulic grease fittings. It is readied for use by applying a permanent air prime through a valve in the base with standard air hose and chuck, then filling with 5 lb of grease. The compressed air actuates a piston which delivers grease through a convenient length of hose to the control handle. The pressure boosting handle develops up to 7500 psi. It is designed for one-hand use and sells for $31. Made by **Aro Equipment Corp.**, Erie Street, Bryan, Ohio.

▲ For more details circle NED-307 M9 on enclosed inquiry slip ▲


* Package with Confidence

STRONG STRONG

**New Mystik Brand Super Flextron® Tape No. 6497 Has Bi-Directional Strength**

**An unique packaging tape.** Super strength bi-directional filaments are an integral part of the product—providing equal strength in both directions. The tape is water and moisture proof. Excellent quick stick properties and it stays stuck.

TYPICAL APPLICATIONS: Strapping and holding heavy machinery parts—sealing heavy-content packages for shipment—holding loose parts in place for assembly of refrigerators and stoves—heavy banding on corrugated, fiberboard and wooden cartons—strapping tubes, rods and lumber—banding groups of cartons on pallets. Frequently replaces steel strapping.

(Conforms to Government Specifications PPP-T-97-Type 11)

*Write for full information on Mystik Super Flextron No. 6497 and other Mystik brand packaging tapes.*

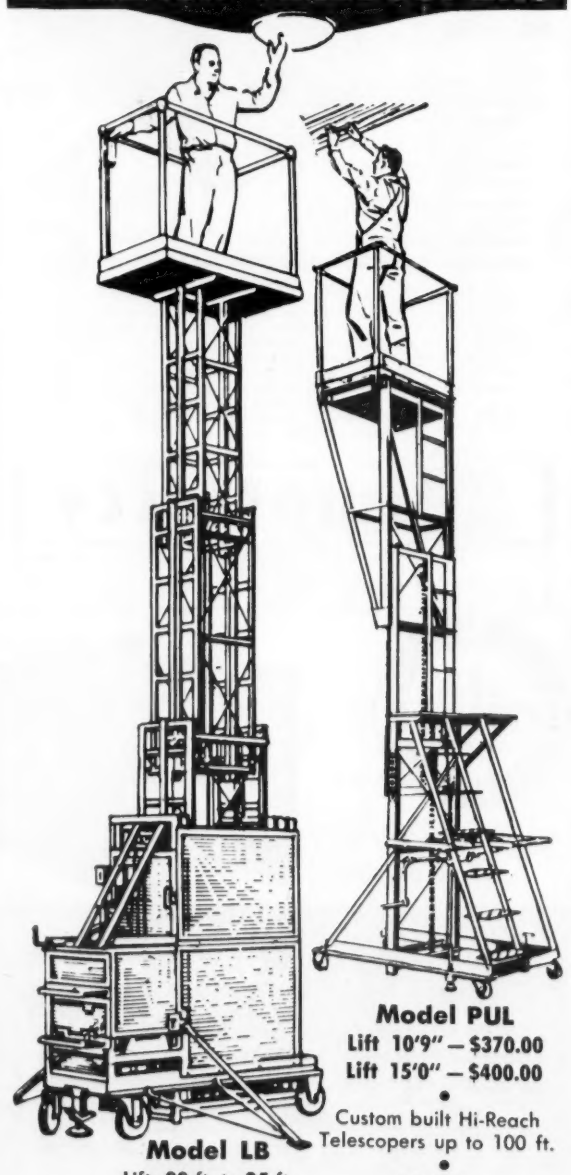
Mystik Adhesive Products, Inc.
2635 N. Kildare Ave.,
Chicago 39, Illinois

MYSTIK BRAND TAPES SELF-STIK

PROTECTIVE COVERING MATERIALS—TAPES THAT TALK

▲ For more details circle NED-308 M9 on enclosed inquiry slip ▲

# OVERHEAD SERVICING is Faster and Safer with HI-REACH TELESCOPERS



**Model PUL**
Lift 10'9" — $370.00
Lift 15'0" — $400.00
•
Custom built Hi-Reach Telescopers up to 100 ft.
•
Write for complete catalog

**Model LB**
Lifts 20 ft. to 35 ft.
$1510.00 up

Headquarters for standard and special built overhead servicing lifters and material handling equipment since 1901.

**ECONOMY ENGINEERING**
4519 W. Lake St., Chicago 24, Illinois

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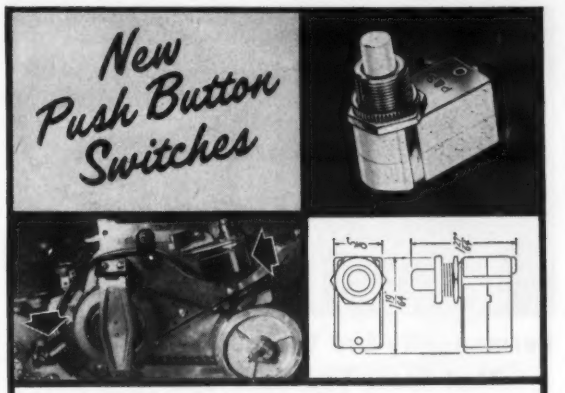
New Push Button Switches



- SINGLE POLE
- THREE WAY
- TWO CIRCUIT
- MOMENTARY CONTACT Normally Open or Normally Closed

6A 125V 3A 250V 1/6 HP 125V For AC-DC Operation

Available with Wire Leads, Solder Lugs, Binding Screws or Plug-In Terminals — on special order.

Electrical products are only as efficient as their controls. That's why so many manufacturers specify P&S 1205. This switch is highly sensitive, compact yet rugged. New over-center snap action gives positive make and break. Features silver alloy contacts and dust-tight plastic housing. Shown above, P&S 1205's installed in a Smith-Corona electric office typewriter. Smith-Corona found the 1205 ideal for this application.

If you have a problem involving wiring devices, write us.

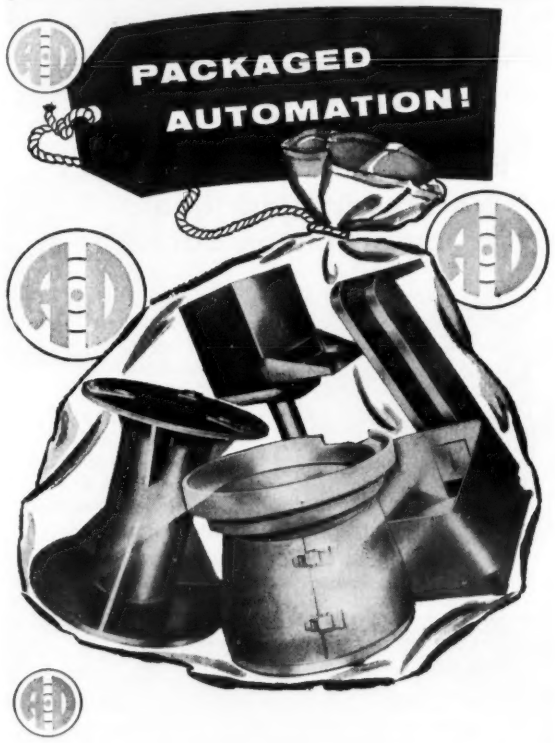
Write Dept. NED-1259 for complete information.

P&S PASS & SEYMOUR, INC. SYRACUSE 9, NEW YORK

60 E. 42nd St., New York 17, N. Y. 1440 N. Pulaski Rd., Chicago 51, Ill. In Canada: Renfrew Electric Co., Ltd., Toronto, Ontario

▲ For more details circle NED-310 M9 on enclosed inquiry slip ▲



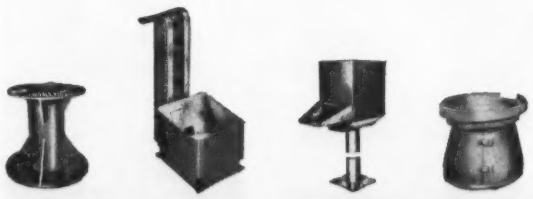



Achieve efficient, automatic production, and produce more all along the line, by integrating equipment designed and built by AUTOMATION for automation.

For example, vibratory parts feeders perform more efficiently on an engineered base permitting maximum power transmission. Either the side delivery or the elevating conveyor supply hoppers (with automatic paddle type relay switch to regulate delivery) hold large quantities of parts and are real labor savers. These are just a few advantages that make automation work and pay for itself.

You can depend on the proven talents at AUTOMATION DEVICES, INC.—enlist their help. Write today for the informative bulletin on "Packaged Automation."

PEECO & VFC DIVISIONS ... TWO GREAT NAMES IN PARTS FEEDING



AUTOMATION DEVICES INC. ERIE, PENNSYLVANIA

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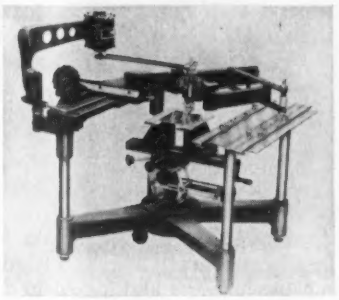
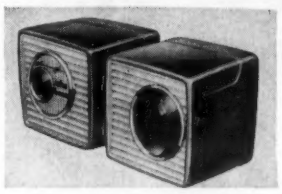
## TABLE MODEL ENGRAVER
### also does slitting and profiling



Tracer - guided Engravograph Model ITX table model engraving machine can be used to make signs and nameplates, or to engrave names and numbers on parts, tools, instrument panels, legend plates, dials, and knobs. As a production tool it will also slit, profile, or mill. It will cut 1/16 in. deep into cold rolled steel in one pass and 1/8 in. deep in nonferrous metals. Area covered in one setup is 12 x 3½ in. Twenty-one ratio settings range from 2:1 to 7:1. Engraving depth is uniform, even on material with uneven surface. Made by **New Hermes Engraving Machine Corp.**, 154 W. 14th St., New York 11, N. Y.

▲ For more details circle NED-312 M9 on enclosed inquiry slip ▲

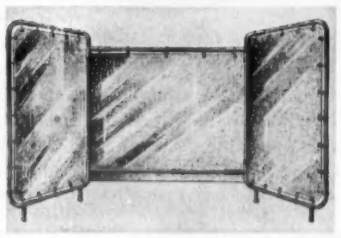
## PHOTOELECTRIC CONTROL
### employs coded infrared radiation



An amplitude-modulated beam of infrared radiation, instead of visible light, is used by this Infrabeam photoelectric control. High sensitivity with minimum interference or saturation by random light results. Receiver circuits are tuned to the modulation frequency. Infrabeam operates equally well on interruption of the direct beam, or on reflection from objects at a distance. Range of control is to 400 in. by reflection, and 400 ft by interruption. Relay operates 600 times per minute, with equal on-off times. Contacts are rated 10 amp at 115-v, 5 amp at 230-v ac. Made by **Cramer Controls Corp.**, Box 281, Centerbrook, Conn.

▲ For more details circle NED-313 M9 on enclosed inquiry slip ▲

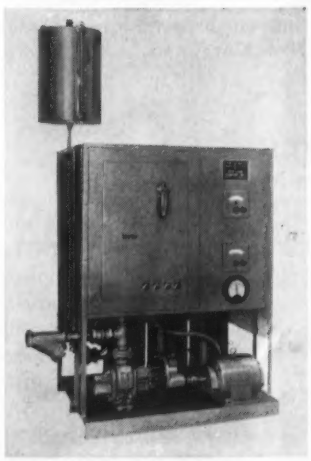
## PORTABLE WELDING SCREEN
### of asbestos cloth and aluminum foil



Curtain material in this portable welding screen is made of pure aluminum foil, permanently laminated to asbestos cloth. It has a 1-in. tubular steel frame with slip joint construction for quick assembly. Screen protects against radiant heat and flame by reflection and withstands up to 1400° F. It can be used as straight-line wall curtain, or as three and four-sided enclosures. Curtains of 12-oz fire-resistant duck and neoprene-coated glass fiber are also available from **Singer Glove Mfg. Co.**, Special Products Div., 860 W. Weed St., Chicago 22, Ill.

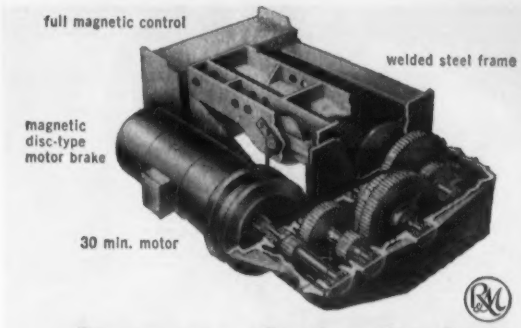
▲ For more details circle NED-314 M9 on enclosed inquiry slip ▲

## HEAT TRANSFER SYSTEM
### packaged unit for process equipment



Various types of heat transfer fluids can be used in Per-Fab packaged electric heat transfer system, supplied prewired with automatic controls and safety devices. Processes using jacketed kettles and lines, cored platens, and hollow rolls are among applications. Capacities range from 4.5 to 80 kw and temperatures range up to 600° F. Both standard and explosion resistant constructions may be modified to include cooling units. Outputs are from 15,350 to 272,000 Btu. Aroclor and heat transfer oils are most commonly used, but ethylene glycol-water mixtures, and Dowtherm may be used. Made by **Per-Fab Co.**, 1246 Broad St., Bloomfield, N. J.

▲ For more details circle NED-315 M9 on enclosed inquiry slip ▲


heavy duty hoist

CAPACITIES: ½ to 10 tons—Type F hoists, in four frame sizes, give you low headroom clearance plus rugged simplicity for demanding service. All-steel frame is welded for rigidity. R&M 1½ to 12½ hp motors have the highest time rating found in any standard hoist—30 min., 55° C. Load brake, three reductions of machined alloy steel heat treated gears and anti-friction bearings operate in splash oil bath. Motor brake is magnetic disc-type. Fully magnetic control features reduced push-button voltage. Wide choice of speeds and lifts. Plain, hand geared or motorized trolleys, or lug mounting. Request Bulletin 801-C today. **Robbins & Myers, Inc., Hoist & Crane Division, Springfield, Ohio.**

take it up with ROBBINS & MYERS hoists cranes

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Now, a NEW Concept in H.D. VACUUM CLEANERS only from Black & Decker, of course

From whisper-quiet, easy-to-carry cleaning power to extra heavy-duty, super capacity wet and dry pick-up . . . you'll find exactly the vacuum you need in the Black & Decker line. Six models to choose from. Illustrated: NEW high-styled, slim-line, lightweight No. 25—ideal for warehouse bins, offices. Check below for further information.

See Tools-Electric Yellow Pages for Service & Sales

Leading Distributors Everywhere Sell

50th YEAR Black & Decker Quality Electric Tools

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**Here's Proof of Performance:**

**"CLAUSING — BEST VERTICAL MILLER FOR SMALL PARTS MANUFACTURING."**

MEYERS MACHINE CO.
GRAND RAPIDS, MICH.

The CLAUSING VERTICAL MILLER is a precision machine tool designed for operations where "extremely accurate" machining is required. The spindle head can be swiveled in a vertical plane and set at any angle, and turret rotated in a horizontal plane making it possible to mill, drill, bore, ream, shape at all angles with one set-up.

It is an outstanding producer, "most versatile, easiest to set up, get around and operate of any miller at or near its low price." Only $875 f.o.b. factory . . . see it before you buy any mill.

*Write for FREE LITERATURE*

CLAUSING **CLAUSING DIVISION**
ATLAS PRESS COMPANY
12-113 N. PITCHER ST., Kalamazoo, Mich.

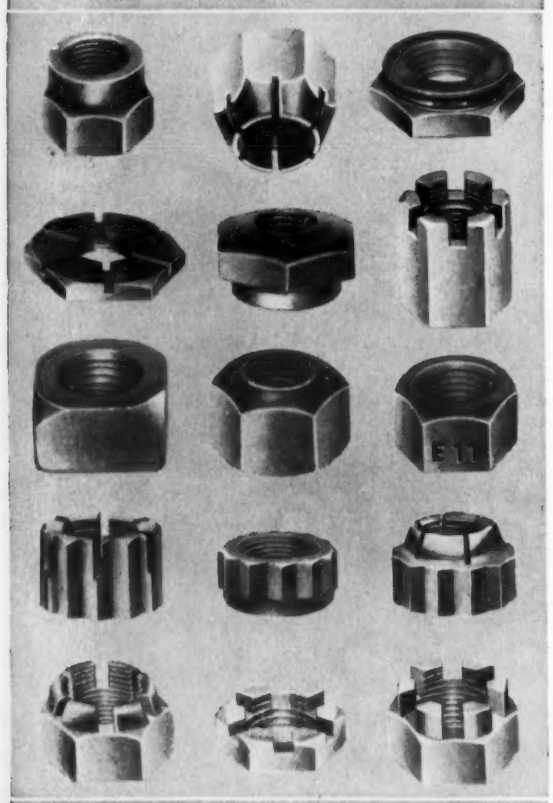
▲ For more details circle NED-318 M9 on enclosed inquiry slip ▲



**SPECIAL NUTS**

*to specs. 7/16"—4¼" cross flats*

special machines + large stock of material × years of experience = speedy deliveries high quality low prices



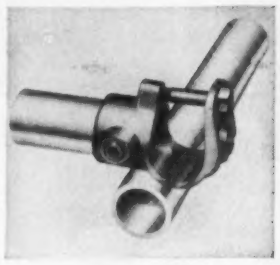
Here are a few samples made to customers specifications . . Our batteries of special high-speed multi-spindle, automatic machines make possible fast and accurate production of hexagon nuts of non-standard height and special shape from carbon or alloy steel, Naval bronze or other non-ferrous metals; also AN 310 through AN 335 as per latest Airforce specifications. Very often the special nut you require may be similar to one we are already making and a simple modification would result in a price advantage and quicker deliveries to you . . Send us your blueprint and particulars —let us quote on your requirements . . We also have a catalog that contains complete specifications, engineering data and prices regarding our standard nuts.

*Manufacturer of Standard and Special*
**12 Pointer, Square and Hexagon Nuts*
*. . . "Huglock" and "Conelock" locknuts.*

**NATIONAL MACHINE PRODUCTS COMPANY**
an SPS company · 44250 UTICA ROAD
UTICA, MICH

▲ For more details circle NED-319 M9 on enclosed inquiry slip ▲

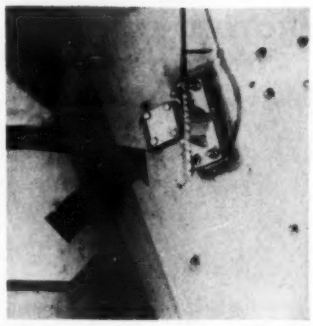

## SLIP-ON PIPE FITTING
### slips over pipe already in place



Structures built of pipe can be expanded with the Kee Klamp No. 110 slip-on fitting without dismantling the existing assembly. Slipping over pipe already in place, it is locked in position with nut and bolt as part of the fitting assembly. Newly-added pipe is slipped into the hub end and locked in position by a set screw capable of supporting a 4000-lb load. No. 110 fitting is made for ¾ to 1½-in. pipe. It augments line of 57 other slip-on fittings for pipe sizes from ⅜ to 2 in. Made by **Kee Klamps North America Ltd.**, 1079 William St., Buffalo 6, N. Y.

▲ For more details circle NED-320 M9 on enclosed inquiry slip ▲

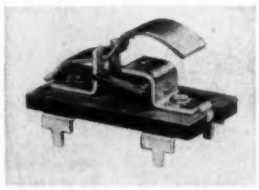
## AIR VIBRATOR
### features long piston stroke



High moisture content iron ore and other similar products in bins and transfer cars are kept moving uniformly by the BH-4, Long-Stroke air vibrator. It has a 30-lb piston stroke that strikes the bin with timed impact to dislodge arched material. The 105-lb unit measures 12¼ x 16 x 6½ in. and requires 45 to 65-psi air. Made by **National Air Vibrator Co.**, 435 Literary Rd., Cleveland 13, Ohio.

▲ For more details circle NED-321 M9 on enclosed inquiry slip ▲

## MINIATURE SWITCH
### for printed circuits, rated 10 amp



Special terminals facilitate printed circuit insertion of the S30-42B Series miniature snap-action switch. The long-life, ¼ x ½ x 1-in. unit features positive overtravel stop and over 50 actuator variations. It is rated 10 amp at 125-v ac, 5 amp at 250-v ac, and ⅓ hp at 125/250-v ac. Special contacts for low voltage uses are available. Made by **Cherry Electrical Products Corp.**, 1650 Deerfield Rd., Highland Park, Ill.

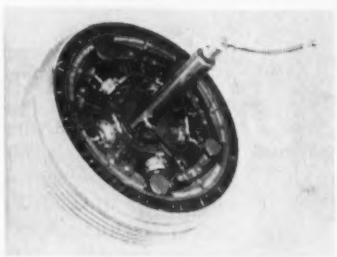
▲ For more details circle NED-322 M9 on enclosed inquiry slip ▲

## RADIAL PUMPS
### deliver from 0.3 to 18 gpm

Pressures up to 10,000 psi are generated without loss of mechanical efficiency by Model HC-4 of Racine-Seco piston pumps. The improved fixed displacement radial pumps deliver from 0.3 to 18 gpm. Shaft rotation is in either direction without reversal of oil flow. Direct drive speeds up to 3600 rpm can be employed. Made by **Racine Hydraulics & Machinery, Inc.**, 200 Albert St., Racine, Wis.

▲ For more details circle NED-323 M9 on enclosed inquiry slip ▲

## AIR-COOLED CLUTCH
### controls tension in center winding



Winding tension on roll material provided by this air-cooled slip clutch is varied by air pressure fed to friction shoes which press against the clutch face. An air gage shows pressure at which clutch is operating and the tension on the material. Clutch dissipates heat and gives uniform torque output at intermediate speeds. It is made in sizes for extremely light to heavy duty installations by **Horton Mfg. Co.**, 1179 15th Ave. S.E., Minneapolis 14, Minn.

▲ For more details circle NED-324 M9 on enclosed inquiry slip ▲

**Permanently End Thread Failure That Costs You Needless**
***• downtime • production loss • labor costs***

Worn, stripped threads? Here's all you do:

1. drill out the old threads
2. tap with *Heli-Coil** tap provided in SHOP-PACK
3. wind in a *Heli-Coil* precision formed, stainless steel Screw-Thread Insert.

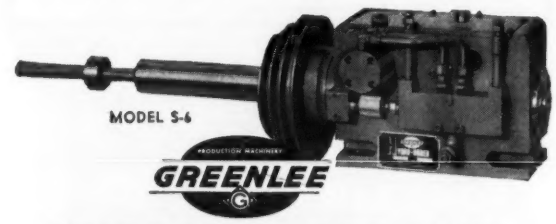
**Result** — Back-to-original-size threads that permanently resist wear, corrosion, galling and stripping.

*Heli-Coil* Screw-Thread Inserts are available in all standard thread sizes in the economical SHOP-PACK Thread Repair Kit containing a large supply of inserts and all necessary installation tools. Write today for folder and name of your nearest *Heli-Coil* distributor. *Reg. U.S. Pat. Off.

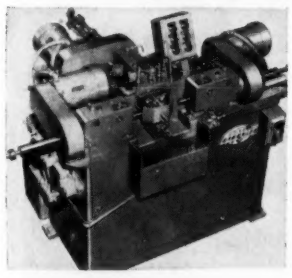
**HELI-COIL CORPORATION**
3412 Shelter Rock Lane, Danbury, Conn.

▲ For more details circle NED-325 M9 on enclosed inquiry slip ▲






**HYDRO - BORER UNIT**
Lowers your costs on precision boring



In the special application shown at the left, aluminum die castings are precision bored by three Greenlee S-6 Hydro-Borers mounted on a welded steel base. Greenlee can help you reduce your boring costs. Write for further information.

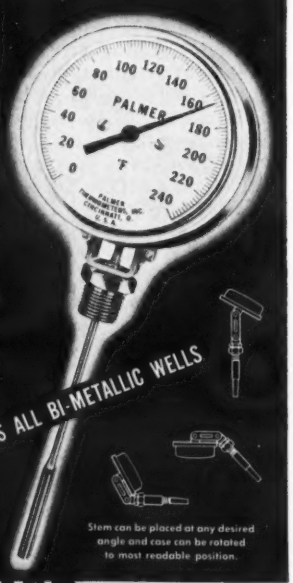
**GREENLEE BROS. & CO.**
1701 MASON AVE.
Rockford, Illinois

▲ For more details circle NED-326 M9 on enclosed inquiry slip ▲



**Outstanding Accuracy**

**PALMER**
MODEL 1035
DIAL THERMOMETER
FULL 3½" DIAL FACE




Check these functional features

- Direct-drive Bourdon Coil with a filled system for longer lasting accuracy.
- Stem can be placed at any desired angle and case can be rotated to most readable position.
- External calibration for zero setting.
- Unaffected by stem alignment.
- Accurate to one scale division.
- No sticking at any temperature.
- Non-corrosive case.

Find Your Palmer Representative in the "Yellow Pages"

Stem can be placed at any desired angle and case can be rotated to most readable position.

Write for Free Bulletin 1035 for complete description and prices.

**PALMER** THERMOMETERS, INC.
Mfrs. of Industrial Laboratory, Recording and Dial Thermometers
2515 Norwood Ave., Cincinnati 12, O.

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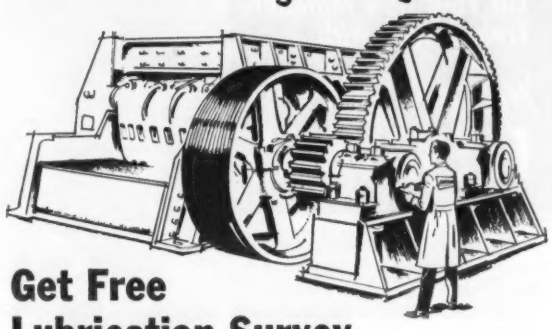
*to eliminate costly bearing failure*



## Get Free Lubrication Survey of Your Production Equipment

At your convenience, an experienced Farval Lubrication Engineer will scientifically survey all your plant equipment. His report will tell you:

- Most economical way to lubricate each piece of equipment
- Whether your equipment can be protected by centralized lubrication
- Cost of centralized lubrication on your production machinery
- How centralized lubrication can increase bearing life, save maintenance costs, and increase production.

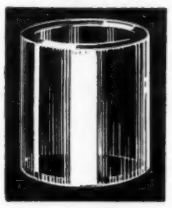
Write today for your free copy of Bulletin 26-S. It gives the cost-cutting advantages of centralized lubrication and shows how you can keep production equipment in top-operating condition, month after month—year after year.

**THE FARVAL CORPORATION**
3283 East 80th Street, Cleveland 4, Ohio
*Affiliate of The Cleveland Worm & Gear Company*
*A subsidiary of Eaton Manufacturing Company*

▲ For more details circle NED-328 M9 on enclosed inquiry slip ▲

**SWIFT**

**carries a complete stock of**



## GAUGE GLASS and CYLINDERS

Need Gauge Glass or Cylinders in a hurry? Then write, wire or phone Swift for immediate delivery.

We have a complete stock of Pyrex Tubular Gauge Glass and Cylinders on hand for chemical, pharmaceutical or industrial applications. Supplied in any length or finish from 2 mm. O.D. to 7" O.D.

**SWIFT** *Glass Division*
SWIFT LUBRICATOR COMPANY, INC.
5 Glass St., Elmira, N.Y.

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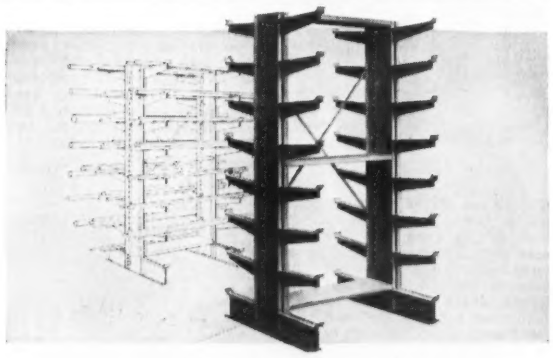

## Republic BAR RACK

### stacks . . . stores 14 tons in 36" space

The all new Republic Steel Bar Rack is the ideal solution to a practical, economical way to store bars, pipes, rods, any elongated stock. Arm arrangement permits easy access and stock segregation. Each arm supports 2,000 pounds. Arms are adjustable on 2" centers. Bonderized. Available in either Olive Green or Gray. Size: 78" high, 36" wide, 33" deep at the base. Call your Republic-Berger Representative. Or, write direct.

**REPUBLIC STEEL**
**BERGER DIVISION**
1034 Belden Ave. • Canton 5, Ohio

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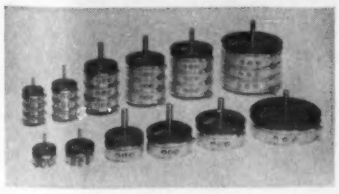
## VARIABLE RESISTORS

### for missiles, airborne systems, are reliable under extreme environments



Line of servo potentiometers is designed for accuracy, long life, and reliability under extreme environments as in missiles and airborne systems or flight simulators. Line includes PVR ball bearing, single and multiturn wirewound types in ½ to 3-in. diameters for temperature range from −55 to 150° C. Standard resistance values are 100 ohms to 250K ohms. Rotary Metlfilm Series MFR features a sealed resistance element impervious to environmental deterioration. A special 2-in. unit in this series performs in −65 to 225° C range.

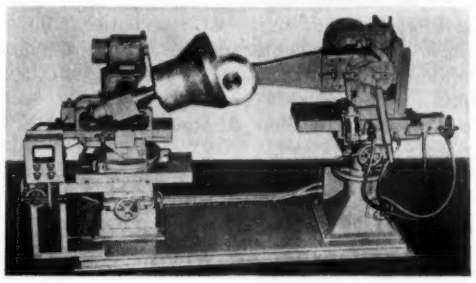
Multiturn units comprise 3, 5, and 10-turn types with function angles from 1080 to 3600 degrees. Another group is the unitized construction series which features special coupling device between sections for ganging. A low-cost series for automation and commercial instrumentation is also available. Made by **Technology Instrument Corp.**, 531 Main St., Acton, Mass.

▲ For more details circle NED-331 M9 on enclosed inquiry slip ▲

## POLISHING MACHINE

### bowl and other shaped metal parts automatically finished and colored

Various shapes and sizes of oval, conical, cylindrical, and bowl-shaped metal parts and reflectors are automatically finished on this standardized polishing ma-



chine. Wheel pressure on parts made of aluminum clad material, stainless steel, low carbon steel, copper, and brass is automatically controlled to prevent excessive pressure when contact surfaces change from large to small radii.

Reversal of wheel rotation during the cycle enables both cutting and coloring operations to be performed in one work cycle. Machine consists of a modified Model G-4 adjustable lathe (right) and a Model E-10 semiautomatic machine with a standard right angle attachment (left) mounted on a single base. Work spindle rotates the part and the polishing wheel reciprocates in contact with the work. Made by **Acme Mfg. Co.**, 1400 E. Nine Mile Rd., Detroit 20, Mich.

▲ For more details circle NED-332 M9 on enclosed inquiry slip ▲

## Republic STEEL LOCKERS

### . . . mark of a good place to work

It is easy to improve employee relations with clean, attractive dress-wash-and-change facilities planned around Republic Steel Lockers. Big, roomy interiors, well planned for convenience and good ventilation. Strong and sturdy—made of steel. Complete protection. Bonderized for long service life. Republic's Berger Division will help you with locker planning. Call your Republic representative today, or write direct.

**REPUBLIC STEEL**
**BERGER DIVISION**
1034 Belden Ave. • Canton 5, Ohio

▲ For more details circle NED-333 M9 on enclosed inquiry slip ▲

**CUT SANDING COSTS . . .**
with Lightweight, FAST

## MITY-MIDGET

Cut sanding costs as much as 75% (over hand sanding), with National's Mity-Midget . . . the original orbital action sander. Weighs only 4 lbs . . . yet has 25 sq. in. of abrasive area. Powerful . . . vibrationless. Write for complete catalog, today.

Write for complete catalog
**NATIONAL-DETROIT, INC.**
ROCKFORD, ILLINOIS

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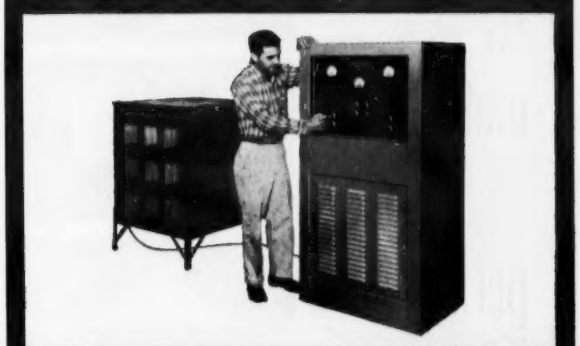
**CLEANING PROBLEM?**
**SONOCEN® Ultrasonic Cleaners by BRANSON may be your answer!**



Experienced counsel in planning, installation, and maintenance of ultrasonic cleaning systems. Wide range of standard, use-proven units combine into efficient cleaning systems with any needed features and capacity from benchtop size to the largest engineered batch or conveyorized installation. Assured nationwide service by factory-trained specialists. Tell us your problem.

**BRANSON ULTRASONIC CORPORATION**
56 Brown House Road • Stamford • Connecticut

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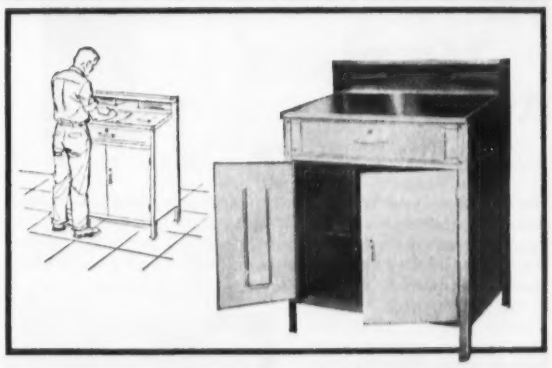

## Republic SHOP EQUIPMENT

### for convenience, comfort, service

Republic Shop Desks are big, roomy, just right for those jobs that require writing in a standing position. Strong, sturdy, steel construction for over-the-years economy. Republic's Berger Division is the leading manufacturer of work benches, tool racks, shelving, and other specialized shop equipment. Call your Republic representative, or write direct.

**REPUBLIC STEEL**
**BERGER DIVISION**
1034 Belden Ave. • Canton 5, Ohio

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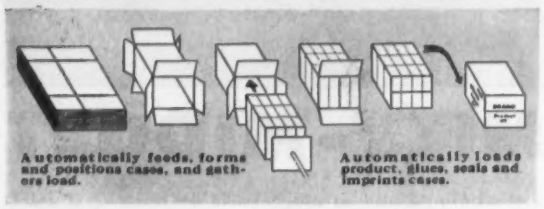
## Take the HANDS out of PRODUCT HANDLING

Let Packomatic equipment do any or all your casing operations AUTOMATICALLY




FOR CASING ROUND, SQUARE, RECTANGULAR OR FREE-FORM PACKAGES OF VIRTUALLY ANY SIZE. If you employ even one person per shift to hand-form cases, or to hand-pack, hand-seal, or hand-imprint them, then it can pay you to install Packomatic equipment. Write, phone or wire for facts on how to reduce your casing costs.

**J. L. FERGUSON COMPANY**
Box 1226, Phone 6-6275, Joliet 12, Illinois

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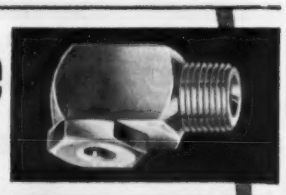
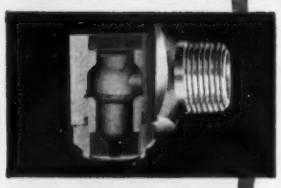
## Spray Nozzle types

choice of over 12,000 basic designs



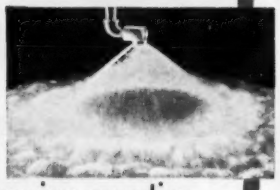
## materials

brass, stainless steel, lead, hard rubber, hardened steel, tungsten carbide and many others.



## performance

uniform distribution with spray angle, capacity, impact and atomization to your specifications.



## to improve every spraying operation

Improve performance, lower spraying costs with Spraying Systems spray nozzles. Prompt delivery. For complete information write for Catalog 24.

**SPRAYING SYSTEMS CO.**
3211 RANDOLPH ST. • BELLWOOD, ILL.
ADVANCED SPRAY NOZZLE DESIGN FOR NEW DIMENSIONS IN CONTROL AND PERFORMANCE

▲ For more details circle NED-338 M9 on enclosed inquiry slip ▲



## Variac® Autotransformers with Meters

The popular Type W5 VARIAC, cased and supplied in two metered models: one with a 0-150-volt output meter and a two-range ammeter for load currents of 0-1 or 0-5 amperes; the second model with the same voltmeter and a wattmeter reading loads of 0-150 and 0-750 watts.

Both have adequate shielding, a current transformer, three-wire line cord, 3-terminal output receptacle (accepting 2-wire plug) fuse in output, and line switch which breaks both sides of the line. Ammeter and wattmeter switches can be switched under load.

**Type W5MT3A Metered Variac (Voltmeter-Ammeter): $85.00**
**Type W5MT3W Metered Variac (Voltmeter-Wattmeter): $110.00**

*Write for Condensed Variac Catalog*

**GENERAL RADIO COMPANY**
WEST CONCORD, MASSACHUSETTS

Broad Avenue at Linden, Ridgefield, N. J. NEW YORK AREA 1000 N. Seward St. LOS ANGELES 38 8055 13th St., Silver Spring, Md. WASHINGTON, D. C. 1150 York Road, Abington, Pa. PHILADELPHIA 1186 Los Altos Ave., Los Altos, Calif. SAN FRANCISCO 6605 W. North Ave., Oak Park, Ill. CHICAGO In CANADA: 99 Floral Parkway, TORONTO 15

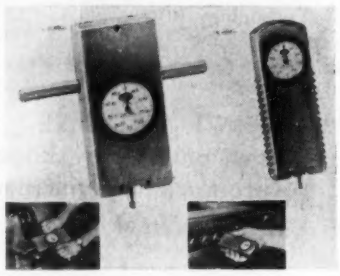
▲ For more details circle NED-339 M9 on enclosed inquiry slip ▲


## VACUUM LIFTING PAD
### lifts various materials up to 1 ton

Barrels, stone, concrete, sheet and plate steel, and other nonporous materials are safely handled by the self-contained Pad Pac vacuum lifting pad. The 18-in. high unit has a 16-in. diameter pad and neoprene seal ring with a lifting capacity of 1200 lb in horizontal lift and 600 lb in shear position. Other pads in 8 to 24-in. diameters with lifting capacities from 300 to 2400 lb are easily attached to the Pad Pac unit. A 1/3-hp motor-driven Powerpac on the unit includes hand-operated controls. Made by **Vac-U-Lift Co.**, Salem, Ill.

▲ For more details circle NED-340 M9 on enclosed inquiry slip ▲

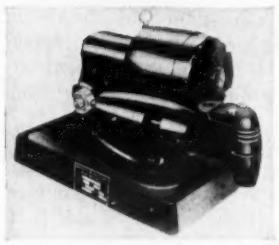
## PUSH-PULL GAGES
### test compression and extension



Accurate when used in any position, two dial push-pull gages measure both compression and extension from the same end of the instrument. Accuracy is within 1/2 per cent of maximum capacity. Model PPL has six units of varying capacities from 1 to 50 lb, and Model PPH has four units with capacities from 50 to 250 lb. Interchangeable stainless steel attachments adapt them for various testing operations. Both models have extension rods and optional extra lengths. Made by **John Chatillon & Sons**, 85 Cliff St., New York 38, N. Y.

▲ For more details circle NED-341 M9 on enclosed inquiry slip ▲

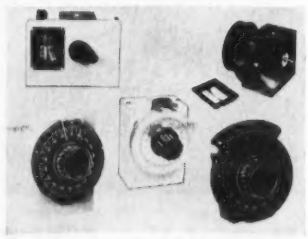
## CHEMICAL FEED PUMPS
### repeat-meters to within 1 per cent



Series 200 Simplex chemical feed pumps with 812 gph capacity will meter repeatedly to within ±1 per cent. Rated for maximum pressure of 10,000 psi, pumps have self-contained lubricating system and E-Z Clean cartridge valves. Controller capacity pumps move specific volumes of fluid, including corrosive materials, into high or low pressure systems in virtually all desired ratios. Liquid ends made from various alloys are interchangeable in the field. Made by **American Meter Co.**, Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.

▲ For more details circle NED-342 M9 on enclosed inquiry slip ▲

## PRECISION DRIVE UNITS
### for synchros, potentiometers, and other rotary components

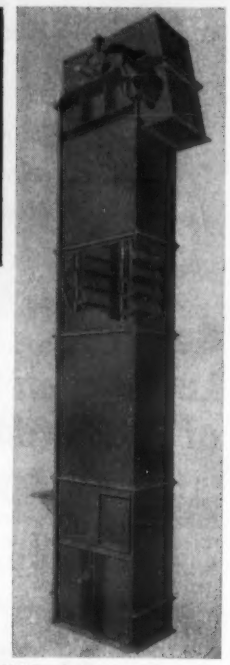


Packaged, ready-to-use precision drive units, built for temperatures from −80 to 200° F and 100-g shock, are available for use with such rotary components as resolvers, synchros, potentiometers, and capacitors. Worm gear Type PDW-1 has a 180-to-1 ratio which provides direct dial readings to 1 min of arc. Stainless steel or aluminum gears and ball bearings are spring loaded to eliminate backlash. Input shaft projects from the back of the housing.

Type DSD-2 dual speed drive unit for accurate positioning and indicating is accurate to 6 min of arc or better. It features inner and outer dials for course and fine positioning, plus in-line input and output shafts without backlash. Ratios through 72 to 1 are offered. A vernier is available in 20-to-1 and 36-to-1 ratios. Economical dual speed Type DSD-3 with in-line input and output shaft, has no backlash. Accuracy is 12 min of arc. Made by **Acton Laboratories, Inc.**, 533 Main St., Acton, Mass.

▲ For more details circle NED-343 M9 on enclosed inquiry slip ▲


## Lift Your Bulk Materials Economically with . . . Webster BUCKET ELEVATORS



WEBSTER Bucket Elevators can be supplied in practically any capacity and height. Made in centrifugal, perfect or gravity discharge, continuous bucket, and super capacity types. Buckets can be furnished malleable iron, duramal or steel mounted on chain or belt.

WEBSTER Elevators are designed especially for the characteristics of the materials to be handled. All components are manufactured and assembled in Webster plant in Tiffin, Ohio.

*Write for Catalog BE-55.*

**Webster MANUFACTURING, INC.**
DEPT. NE-129, TIFFIN, OHIO
BULK MATERIALS HANDLING EQUIPMENT
Offices in all Principal Cities
SINCE 1876

▲ For more details circle NED-344 M9 on enclosed inquiry slip ▲



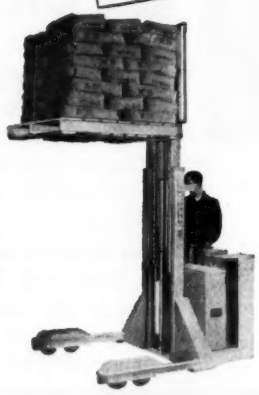
## EXPLOSION PROOF CLASS I GROUP D POWERED LIFT TRUCKS

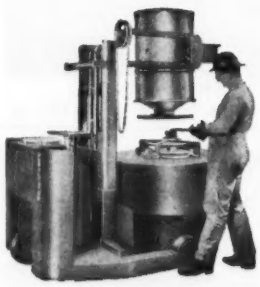
Underwriters' Laboratories, Inc. INSPECTED TYPE EX REVOLVATOR COMPANY

## APPROVED and PROVEN

8 YEARS ON THE JOB

Since 1951 Revolvator Go-Getters, designed for this service, have been specifically approved by leading industrial insurance companies for use in Class I Group D explosion hazardous areas in major plants from coast to coast. User comments like those below show that the Go-Getter has been more than approved by safety authorities...it has been proven in use for eight years.

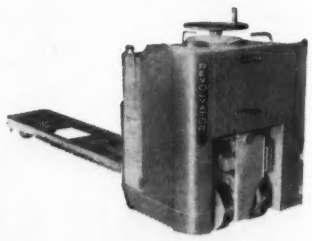




Air in the color mixing room of the finishing plant where the Go-Getter above is used carries organic dusts as well as explosive fumes. The foreman says, "The men like the Go-Getter and use it steadily."

The Plant Manager where the Go-Getter at the left is used says, "In an area where we have explosive fumes, aluminum chloride dust and hydrochloric acid fumes what was previously a difficult, disagreeable job for two men is now easy for one."

Executives in the chemical plant where the model to the right is used say, "We use the Go-Getter in our area which has the most severe hazard." Another plant where quantities of explosive solvents are used for "wash down" reports of a similar model, "We are well pleased and we are ordering another Go-Getter."



A major insurance association writes, "We are quite willing to accept the unit (Go-Getter) as it is designed with explosion proof housings for the motors and controls as usually specified for electrical equipment that can be safely used in explosion hazardous areas."

A nationally known safety engineer writes, ". . . calling the existence of this line of trucks to the attention of the industry as we believe many would want to know about this equipment."

The Go-Getter is the latest addition to a complete line of materials handling equipment for use in explosion hazardous areas that Revolvator has been building for over a quarter of a century.

**REVOLVATOR CO.**
8732 TONNELE AVENUE, NORTH BERGEN, N. J.
SINCE 1904

▲ For more details circle NED-345 M9 on enclosed inquiry slip ▲

*The answer to your need for LOW-COST CONTINUOUS SEPARATION of TRAMP IRON from fast-moving, deep burdens*

**CERAMOX V!** That's Dings' new, powerful ceramic magnet material which protects machinery and product purity against tramp iron damage. Dings' new ceramic radial-pole Perma Pulleys provide high magnetic strength across entire belt width and greatest removal efficiency at high operating speeds. Other money-saving features . . .

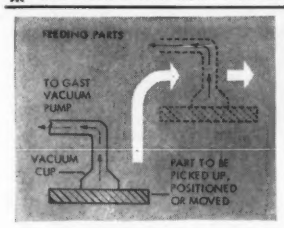
- **No operating cost. No wiring or power required**
- **No maintenance. Unit is automatic**
- **Quickly and easily installed**
- **High resistance to demagnetization**
- **High and prolonged surface strength**
- **Stainless steel surface for all-weather service**

*It will pay you to get complete details. Write for information today.*

**Dings**

**DINGS MAGNETIC SEPARATOR COMPANY**
**W. Electric Ave., Milwaukee 46, Wis.**

For more details circle **NED-346 M9** on enclosed inquiry slip



NEW

**Gast Booklet ready to give you**

## "APPLICATION IDEAS"

**on uses of air motors, compressors, vacuum pumps**

Looking for new ways to improve methods—save time—or cut costs? This booklet may be valuable to you! With line drawings, it shows dozens of the basic principles of "putting air to work".

With photographs of our customers' products—from air mixers to data plotters—it illustrates each principle. . .and shows how Gast rotary Air Motors, Compressors and Vacuum Pumps provide advantages as original equipment or in plant use.

Design Engineer or Plant Master Mechanic, you'll find this booklet of interest. . .and it may "spark" an important idea you can use!

WRITE TODAY FOR NEW "APPLICATION IDEAS" BOOKLET!

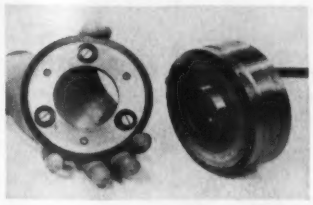
Gast Manufacturing Corp.
P.O. Box 117 -R
Benton Harbor, Mich.

**GAST ROTARY**
- AIR MOTORS TO 7 H.P.
- COMPRESSORS TO 30 P.S.I.
- VACUUM PUMPS TO 28 IN.

*"Air may be your answer!"*

For more details circle **NED-347 M9** on enclosed inquiry slip

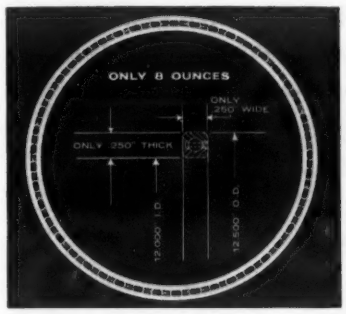
## ELECTROMAGNETIC CLUTCHES
### torque ratings are 30 to 725 lb-ft



Stationary field design of these face-tooth type electromagnetic clutches minimizes maintenance. Thus, they can be located deep inside a drivebox or transmission. Five ratings from 30 to 725 lb-ft of torque are offered. Three or six drive pins provide a simple attachment to a driven member. Engagements are made in 0.040 sec and disengagements in 0.020 sec. Applications include feed, no-slip, reversing tracer, and positioning drives. Clutches are available for 24 or 90-v dc operation. Made by **I-T-E Circuit Breaker Co.**, 1900 Hamilton St., Philadelphia 30, Pa.

For more details circle **NED-349 M9** on enclosed inquiry slip

## THIN SECTION BEARINGS
### in bores from 4 to 12 in.




Ninety sizes with bores from 4 to 12 in. comprise line of Reali-Slim CP bearings which have Conrad deep-groove ball radial construction and a one-piece bronze snap - over separator. Sizes range from 1/4 to 1 in. in width and cross section. The lightweight bearings are also available as four-point and angular contact types in limited stock sizes, and in special metals. Coil spring and other types of separators can be supplied. Made by **Kaydon Engineering Corp.**, McCracken Street, Muskegon, Mich.

For more details circle **NED-350 M9** on enclosed inquiry slip

## CARTRIDGE HEATERS
### in lengths up to 24 in.

Thunderbolt cartridge heaters are now available in lengths up to 24 in. or longer, in 3/8, 1/2, or 5/8-in. diameters. Heaters are used on any hand and automatic

machines requiring spot heating. Ratings range from 40 to 200 w per square inch of radiating surface. Temperatures are dissipated rapidly through alloy sheath without detriment to unit life. Made by **Vulcan Electric Co.**, 88 Holten St., Danvers 7, Mass.

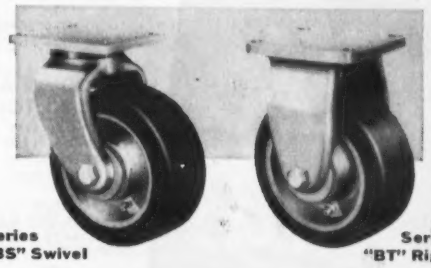
For more details circle **NED-351 M9** on enclosed inquiry slip

## Corrosion Resistant Casters

Meet Bassick's new light duty, aluminum Series "BS" (swivel) and "BT" (rigid) casters. Designed for food processing and other plants where corrosive conditions prevail. Or where casters are often exposed to the elements.

Sizes: 5" and 6" diameter wheels with Neoprene rubber tread. Features: Corrosion-resistant aluminum construction. Sealed swivel and wheel bearings. Smooth surfaced horn has no cracks nor projections to pick up dirt. Easy to clean.

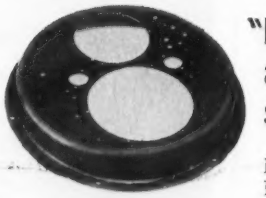
Another example of Bassick casters to keep industry moving . . . efficiently. THE BASSICK COMPANY, Bridgeport 5, Conn. In Canada: Belleville, Ont. 9.34




Symbol of SW Excellence **Bassick** A DIVISION OF **STEWART-WARNER CORPORATION**

For more details circle **NED-352 M9** on enclosed inquiry slip

# How to get custom stamping without special tooling!



**ONE HIT PIN POINTS 63 HOLES** in 60" dia. dish-stamped boiler door with tolerance of 1/16" on dia. and flat across flange within 1/16".

**COST CUT FROM** $8.49 to $2.59 per unit through use of dies in COMMERCIAL "Die Bank" in custom stamping wheel covers for aircraft towing tractor.

**STAMPED CLUTCH HOUSING** held to tight tolerances of +.005" -.000", +.005" -.005" and +.000" -.010" eliminates costly machining.

## "Die Bank" of more than 20,000 available die components saves cost of new dies

Die components from COMMERCIAL's extensive "Die Bank" are economically meeting unusual stamping requirements for many industries—with extensive savings in tooling expense. In many instances, the "Die Bank" combined with a small additional tool cost will handle your exact requirement.

Modern press equipment—100-ton to 2000-ton—bangs out more hits per hour to further contribute to lower unit cost for medium to heavy stampings.

***SEND FOR FREE BULLETIN***

Illustrated Bulletin 200-P3 describes COMMERCIAL's routine handling of many unusual metal forming jobs for industry.

*Write Commercial Shearing & Stamping Co. Dept. J-49, Youngstown 1, Ohio.*

**COMMERCIAL shearing & stamping**

For more details circle **NED-348 M9** on enclosed inquiry slip

# ONE Selector Switch for DOUBLE DUTY

The same Bulletin 800 standard duty selector switch for two-position use, left; three-position use, above.

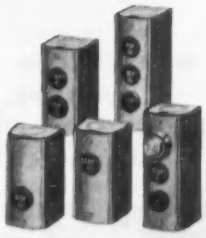
## —Two-Position or Three-Position Operation

Changed in just 30 seconds

The "built-in" flexibility of this A-B Bulletin 800 selector switch gives *you* two advantages: a *complete* stock, *reduced inventory*. It takes only 30 seconds to change from two-position to three-position—or vice versa—and the Bulletin 800 is shipped with a selection of the most used nameplates. To make the changeover, you just loosen two screws, turn an indicator plate 90°, and retighten the screws. The maintenance free, double break, silver contacts are in the cover—completely protected against dust, dirt, and careless wiring.

**A-B Standard Duty Push Buttons**

The Bulletin 800 push buttons also have their contact mechanism in the wrap-around cover. With cover removed, terminals are exposed for easy wiring. One, two, or three buttons; also, two buttons with pilot light.



Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

**ALLEN-BRADLEY**
Member of NEMA
*Quality* MOTOR CONTROL

For more details circle **NED-353 M9** on enclosed inquiry slip

FREE NEW-16 PAGE CATALOG

WRITE FOR YOUR COPY TODAY

JIG AND FIXTURE COMPONENTS
LATCH BOLTS
CAST IRON HAND KNOBS
ALUMINUM HAND KNOBS
QUARTER TURN SCREWS
SHOULDER SCREWS
JIG FEET (3 TYPES)
SPHERICAL WASHERS
FIXTURE KEYS
KNURLED HEAD SCREWS
TOGGLE SHOE CLAMPS & V-PADS

HOLD DOWN AND CLAMPING TOOLS
T-NUT & STUD SETS
STEP BLOCK & CLAMP SETS
FLANGED NUTS
CUT THREAD STUDS
TEE NUTS
COUPLING NUTS
ADJUSTABLE STEP BLOCKS
STRAP CLAMPS (PLAIN & STEP TYPE)

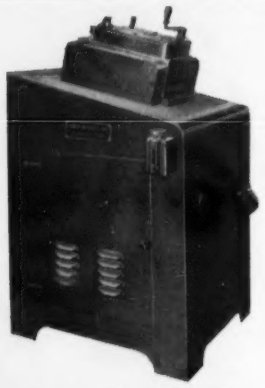
CATALOG INCLUDES TRACING TEMPLATES

Northwestern
127 HOLLIER AVE., DAYTON 3, OHIO

For more details circle NED-354 M9 on enclosed inquiry slip



small parts straighteners



Flat, accurate stampings save hours of assembly time, work better and last longer where flatness is important to performance, paint and plate easier and look better.

Low cost Cooper Weymouth straighteners are fast, accurate, automatic, straighten small parts, coils or strips to .001" - .002". A unique two-point adjustment gives fast, easy, precise set-up. Machined steel housings, hardened and ground rollers and anti-friction bearings insure longest life. A 4 gear-train drive equalizes bearing loads, gives smoother high-speed operation. Self-contained and self-powered with variable speed controls, straighteners are available in bench-height cabinet or portable models, in four sizes.

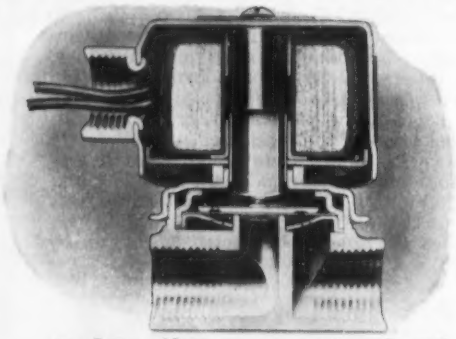
*Also inquire about other Cooper Weymouth cost-saving automatic press room accessory equipment.*

COOPER WEYMOUTH, INC.
604 Honeyspot Road, Stratford, Conn.

For more details circle NED-355 M9 on enclosed inquiry slip



unlimited applications!



• for flow control of water, air, low pressure steam, brines, light oils, gases.

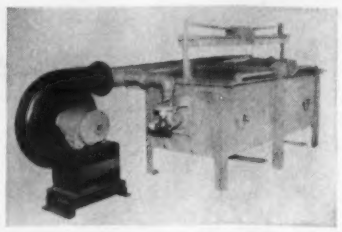
JE INDUSTRIAL SOLENOID VALVES

5/16" to 1-1/2" Port Sizes—1/4" to 1-1/2" N.P.T. Connections
*Write for information bulletin today.*

Controls Division
JACKES-EVANS MANUFACTURING COMPANY
4427 Geraldine Ave., St. Louis 15, Mo.

For more details circle NED-356 M9 on enclosed inquiry slip


## DOUBLE OPEN-TOP FORGE
### fueled by propane or natural gas



Improved Model 100 double open-top forge, fueled with either propane or natural gas, permits simultaneous forging and welding of bars, rods, and shapes. Each top has a swinging arch which simplifies building of heat chambers with loose brick to accommodate various shapes and sizes of work. Temperatures up to 2300° F and any type of flame can be obtained and held. Center of combustion is created high up in the flue where work is mounted. Forge is equipped with a 5-hp turbo blower which delivers air at 875 cfm. It measures 112 in. long, 36 in. wide, and 30 in. high with 4½ x 4½-in. top opening. Made by **Mahr Mfg. Co.**, 128 Monk Ave., Hopkins, Minn.

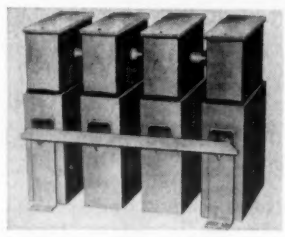
For more details circle NED-357 M9 on enclosed inquiry slip

## DIGITAL LENGTH CONTROLLER
### automates cut-to-length operations

Connected to shearing mechanisms which are controlled by relays, the transistorized digital length controller automates heavy-duty cut-to-length operations. Sensing device consists of a Rotopulser which is connected to a measuring wheel for mechanically converting material length into proportionate shaft rotation in steps as small as 0.005 in. Rotation is converted into pulse signals which are displayed numerically on the controller. When material reaches preset length, cut-off is actuated. Accessory equipment includes a time delay compensator, automatic sequencing control system, and punched tape program control for batch programming. Made by **Dynapar Corp.**, 5150 Church St., Skokie, Ill.

For more details circle NED-358 M9 on enclosed inquiry slip

## POWER FACTOR CORRECTERS
### for use at 480 and 600 v, 60 cycles

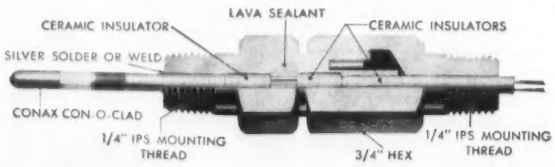


Type PF standard and PFD dustproof series of 20 kvar power factor correction capacitors for low-voltage industrial applications are furnished for both single and three-phase uses at 480 and 600 v, 60 cycles. They are impregnated with Clorinol nonflammable askarel synthetic liquid dielectric for operation over a −40 to 115° F range. Type PFD incorporates fuses as standard equipment that will interrupt 100,000 amp. Set-screw connectors handle No. 3 wire or smaller. Brackets for floor, wall, or ceiling mounting are also available. Made by **Sprague Electric Co.**, 183 Marshall St., North Adams, Mass.

For more details circle NED-359 M9 on enclosed inquiry slip

## INSULATED THERMOCOUPLES
### flexible type for up to 3000° F

Flexibility of Con-O-Clad mineral insulated thermocouples allows them to be bent into unlimited configurations. Units are made for temperatures up to




3000° F with sheathed probes measuring from 0.040 to 0.375 in. OD. They are shock and vibrationproof, respond almost instantaneously, and resist corrosion, depending upon choice of sheath metal. Units are made of special thermocouple wires with insulations of magnesium, aluminum or zirconium oxide, and sheathed with stainless, Inconel, titanium, or other metal tubing. Minimum insulation resistance, wire-to-wire or wire-to-sheath, is 1.5 megohms at 500 v dc in 0.062-in. diameters or larger for lengths up to 30 ft. Ungrounded, grounded, and bare wire hot junctions are available. Made by **Conax Corp.**, 2300 Walden Ave., Buffalo 25, N. Y.

For more details circle NED-360 M9 on enclosed inquiry slip


LONG-TERM ACCURACY IN A LOW-COST FLOWMETER?
MERIAM HAS IT!

Long-term accuracy is part and parcel of a Meriam Flowmeter. For a Meriam Flowmeter operates on the inherently accurate manometric principle.

It's also a simple device: no pressure-tight bearings, no magnetic followers, no calibration problems.

With the orifice installed in the pipeline, the flowmeter can be located at almost any convenient reading location.

The Type H Flowmeter, shown here, is a rugged, all-steel instrument that will handle pressures to 250 psig, differentials to 160" water. It has no moving parts, is easy to install, requires little maintenance. Other models share these virtues, too; the largest are made for pressures to 1000 psig, differentials to 800" water. Request Bulletin 18-A.

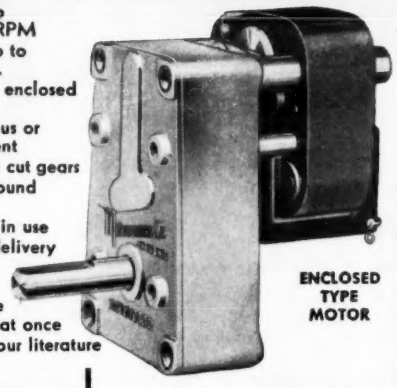
The MERIAM Instrument Company
10920 Madison Avenue, Cleveland 2, Ohio

For more details circle NED-361 M9 on enclosed inquiry slip



GEARMOTORS
5 Basic Sizes

- Speed up to 200 RPM
- Power up to 40 in. lb.
- Open or enclosed case
- Continuous or intermittent
- Machine cut gears
- Finish ground shafts
- Millions in use
- Prompt delivery
- Special features available
- Samples at once
- Ask for our literature



ENCLOSED TYPE MOTOR

Millions of Motoresearch Gearmotors now in use!

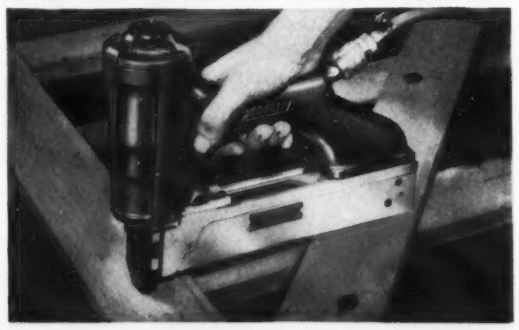
Motoresearch also designs and produces high frequency motors, generators, rectifier type power supplies and other Special Electrical Equipment. We invite your inquiries.

MOTORESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN
Designers and Manufacturers of
SPECIAL ELECTRICAL EQUIPMENT

For more details circle NED-362 M9 on enclosed inquiry slip



NEW! the DUO-FAST S-762 Staple Gun



5 times faster than hand nailing!

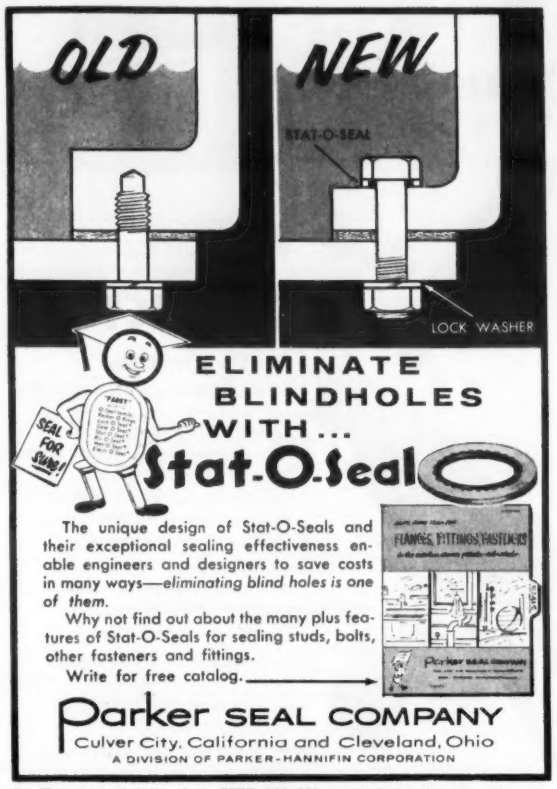
Staple-nailing with this new S-762 is speedy, automatic, efficient. It wallops home heavy, 16-gauge staples, as long as 1½", at 60 pounds air pressure.

Use this portable, one-hand staple-nailer on crates, assembling boxes, making expendable skids, and many other nailing jobs. It's a money saver!

**Send for Bulletin FT-43** on the new, fully guaranteed DUO-FAST S-762 Staple Gun. Just one of the 150 DUO-FAST models.

DUO-FAST / FASTENER CORPORATION
3758-60 River Road
Franklin Park, Ill.

For more details circle NED-363 M9 on enclosed inquiry slip




The unique design of Stat-O-Seals and their exceptional sealing effectiveness enable engineers and designers to save costs in many ways—*eliminating blind holes is one of them.*

Why not find out about the many plus features of Stat-O-Seals for sealing studs, bolts, other fasteners and fittings.

Write for free catalog.

**Parker SEAL COMPANY**
Culver City, California and Cleveland, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION

▲ For more details circle **NED-364 M9** on enclosed inquiry slip ▲



# Wears like STEEL!

# Protects like RUBBER!

**NEW DURALAST WHEEL BY HAMILTON OUTWEARS RUBBER 5 to 1! . . . Saves up to 500% in tire replacement costs on trucks and trailers!**

**TOUGH,** synthetic urethane treads resist abrasion, chunking and tearing. Chemically inert . . . oil, grease, water and brine resistant!

**RESILIENT,** noiseless, non-marking! DURALAST Wheels roll easily under loads double those permitted by rubber. Withstand severe shocks . . . resist formation of "flat spots" under static load!

**COMPLETE** floor protection! Ends wheel damage to factory floor.

**AVAILABLE** for replacement on present equipment, or for new trucks and casters. Wheel sizes from 4" to 12" diameter . . . straight or tapered roller bearings, or plain bore.

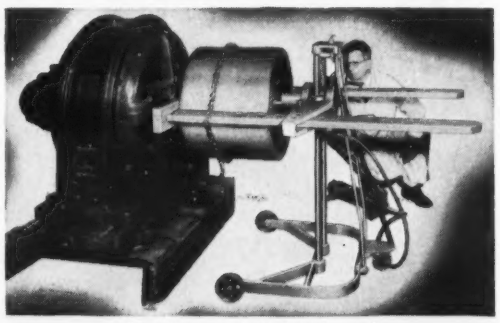
**WRITE NOW FOR FREE BULLETIN!**

**THE Hamilton CASTER & MFG. CO.**
1766 Dixie Highway, Hamilton, Ohio

▲ For more details circle **NED-365 M9** on enclosed inquiry slip ▲



**THE QUICK, EASY, WAY TO REMOVE AN OBJECT FROM A SHAFT!**



*This Powerful, Hydraulic*

# PULLEY PULLER

**For Removing Pulleys, Wheels, Gears, Couplings, Sheaves, etc.**

One man can do it in minutes — even if objects are stuck fast. No crowbars, sledges, or torches. No damage to equipment. Puller is adjustable — easy to move — rugged. Hundreds being used in industry.

- **5-ton size on wheels** ..... **$122.00**
- **20-ton size on wheels** ..... **$368.00**
- **50-ton size on wheels** ..... **$830.00**

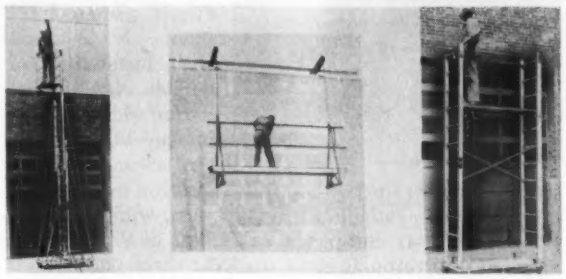
**F.O.B. Factory, New Quicklink chain and set of ten ram adaptors at slight additional cost.**
**Write for complete information Catalog E**

**INDUSTRIAL ENGINEERING EQUIPMENT CO.**
122-124 E. 4th St. Davenport, Iowa

▲ For more details circle **NED-366 M9** on enclosed inquiry slip ▲


## MULTIPLE-USE SCAFFOLD also serves as ladder or platform

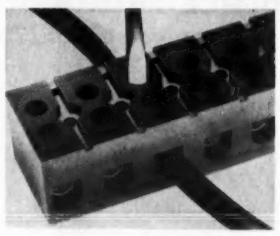
Suited for painting, cleaning, and maintenance work, this Omni-Reach scaffold is extremely versatile. By simple manipulation it serves as a straight extension



ladder, a telescopic scaffold, an adjustable scaffold with a large platform, a hanging scaffold, or a dolly and hand truck. Changeover is made in a few minutes. It is compact for storage or passage through doorway, and is made of steel and aluminum. Made by **Atlas Industrial Corp.**, 849 39th St., Brooklyn 32, N. Y.

▲ For more details circle **NED-367 M9** on enclosed inquiry slip ▲

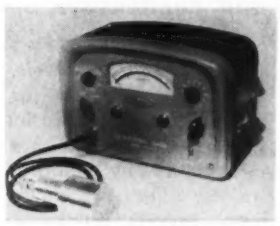
## ELECTRIC TERMINAL BLOCKS are insulated multiconnector type



A vise-like grip on each wire of through-connected pairs is assured in this insulating Type 9-85 pressure-contact terminal block. Suited for heavy duty equipment, appliance, and other use, blocks are one-piece molded phenolic or special plastics to meet Military specs. Each terminal position has two setscrews and two copper-bronze contact members, and either wire can be disconnected independently. Blocks with two to twelve terminals are available. Two or more blocks can be joined end-to-end, or individual blocks can be cut down in the field with a saw. They are rated 85 amp and above 8000 v breakdown. Made by **Kulka Electric Corp.**, 633-643 S. Fulton Ave., Mt. Vernon, N. Y.

▲ For more details circle **NED-368 M9** on enclosed inquiry slip ▲

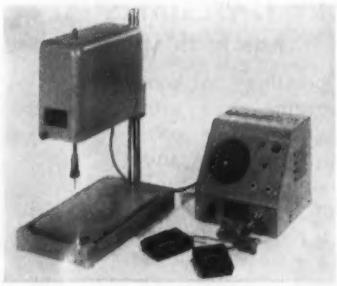
## ULTRASONIC THICKNESS GAGE detects flaws, corrosion in metal



Transistorized 10-lb ultrasonic thickness gage can be strapped to user's back for measuring thickness, or detecting flaws and corrosion in pipe, storage vessels, hull plates, and other metal or plastic surfaces. Gage operates on pulse-echo method, reads directly in inches, and is accurate to 1 per cent of full scale. It gages thicknesses up to 3 ft in aluminum and steel, and down to a minimum of 0.060 in. in aluminum and 0.070 in. in steel. Instrument will aid in location of liquid level in a gas transmission line and can detect the peaks of the corrosion pits. Made by **Sperry Products, Inc.**, 2100 Shelter Rock Rd., Danbury, Conn.

▲ For more details circle **NED-369 M9** on enclosed inquiry slip ▲

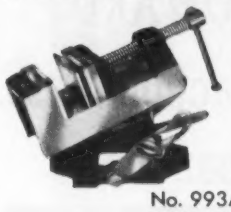
## AUTOMATIC TAPPING MACHINE for 32 to 120 standard threads



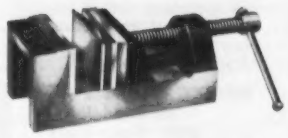
Only one master lead screw is needed in this multiple-pitch automatic tapping machine. It covers the full range of standard pitches from 32 through 120 threads per inch in tap sizes from No. 000 through No. 10. Changeover from one pitch to another is made in 1½ min. Adjustable clutch permits precise control of torque, and stroke is infinitely adjustable from ⅛ to 2 in. Machine can be used for through or blind hole tapping in almost all materials, and production is up to 3000 cycles per hour. Control is by footswitch or pushbutton. Made by **Milman Engineering Co.**, 1831 Pontius Ave., Los Angeles 25, Calif.

▲ For more details circle **NED-370 M9** on enclosed inquiry slip ▲


# New Stanley-Yankee Vises cut costs at bench and machine



No. 4993A
Swivel-Tilt Vise
3" Jaws



No. 993A
Utility Vise
3" Jaws

New No. 4993A Swivel-Tilt Vise combines swivel base and angle base for quick compound angle set-ups. The exclusive dovetail slot in the vise permits adjustment the full length while retaining the swivel feature. Vise can be detached from swivel-tilt base quickly and easily.

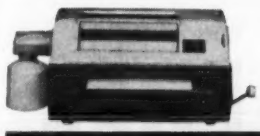
New No. 993A Utility Vise with 3" Jaws—precision-built for machine shop use.

Vises and bases are available separately. Ask your industrial supply distributor for details, or write Stanley Tools, 5812 Elm St., New Britain, Connecticut.

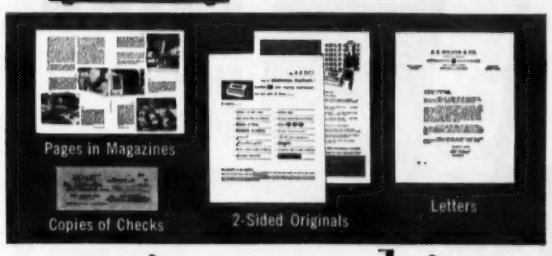
**STANLEY** The Tool Box of the World ®

▲ For more details circle **NED-371 M9** on enclosed inquiry slip ▲

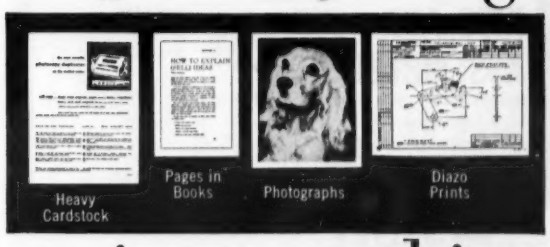




**THE NEW A-B-DICK PHOTOCOPIER** model 110




# copies anything

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Whether you require a Universal, Induction or Shaded Pole Gear Motor or individual Gear Reduction Units, Howard can fill your mechanical and electrical requirements from a complete line of standard models that assures you of minimum cost and delay. One of the many Howard models is shown below. Check your specs first with Howard or write for our free complete catalog.

**MODEL 3000—2 Pole Shaded Pole with Gear Unit**

DIAMETER: 3 7/16"

LENGTH: 3 5/8" to 4 1/2"

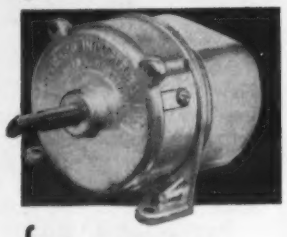
MAX. CONT. TORQUE:* 1 RPM (at 1 1/2" stacking length) 45 in. lbs.

MAX. INTER. TORQUE*: 1 RPM (at 1 1/2" stacking length) 70 in. lbs.

BEARINGS: Porous bronze sleeve type with oil reservoir.

*With external fan. Torques at other speeds from 1 to 400 RPM also available.

There's a HOWARD fractional h.p. gear motor



for every application!

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HOWARD INDUSTRIES, INC.
1740 State St., Racine, Wisconsin

Divisions: Electric Motor Corp., Cyclohm Motor Corp., Racine Electric Prods., Loyd Scruggs Co

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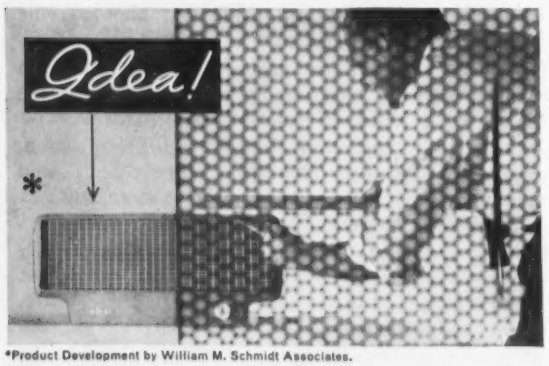


*Product Development by William M. Schmidt Associates.

**mock-up projects design with H & K perforated metals**

Here is an actual H & K perforated metal grille utilized in a mock-up of a record player. This greatly helps the Industrial Designer project his concepts as H & K perforated metal is now in its proper element for consideration of use and selection of pattern.

By referring to the H & K General Catalog, the designer can select one or more perforated patterns for his project.

H & K perforated metals provide the Industrial Designer, and other men of ideas, a medium of unlimited opportunities for designing better and more attractive products.

Thousands of patterns

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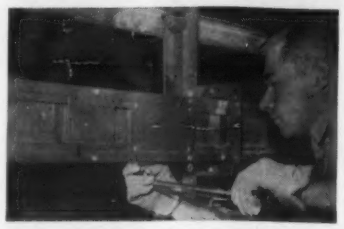
Chicago Office and Warehouse: 5658 Fillmore St., Chicago 44
New York Office and Warehouse: 114 Liberty St., Dept. NED, New York 6

For more details circle NED-375 M9 on enclosed inquiry slip

## POWER DISTRIBUTION DUCT
### plug-in power take-off can be made anyplace along the line

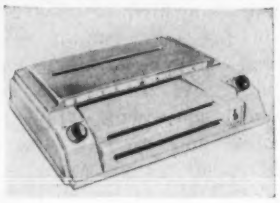


Safe, convenient distribution of electricity in industrial plants is achieved with installation of flexible XL BUStribution duct. Plug-in power take-offs can be made at anyplace along the line without disconnecting main power line. Duct is available in 10-ft lengths, with necessary elbow and short end-pieces, in ratings of 225 to 1000 amp, and up through 600 v single or three phase ac.

For safety when installing a bus plug, the plug-in cover must be closed until switch plug is in safe position. It cannot be attached or removed while switch is in "on" position. Thus, it is almost impossible for electrician to touch a live bus bar. This UL-listed duct withstands destructive electrical and mechanical stresses based on present and future short circuit values. Made by **I-T-E Circuit Breaker Co.**, BullDog Electric Products Div., Box 177, Detroit 32, Mich.

For more details circle NED-376 M9 on enclosed inquiry slip

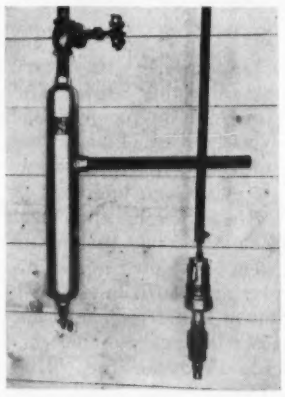
## OFFICE PHOTOCOPIER
### copies up to 12 x 12-in. originals



Any number of copies are made with preset exposures from one negative or master with Royal Scot office photocopying equipment. Readable negatives from originals printed on one side only or positive prints in black on white are optional. Negatives may be stored for reruns at any time. The Laird model is a complete photocopying unit or, alternately, a separate multicopy processor called the Highlander. Equipment copies originals up to 12 in. wide and long. It has a 70-ipm exposure speed and 56-ipm development speed. The 23 1/2 x 15 x 5 3/4-in. machine operates on 110-v, 60-cycle ac. Cost is less than 5 cents per print. Made by **Hunter Photo-Copyist, Inc.**, 566 Spencer St., Syracuse 4, N. Y.

For more details circle NED-377 M9 on enclosed inquiry slip

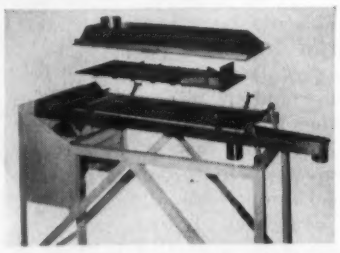
## AIR & STEAM PURIFIERS
### remove moisture and condensate



Equipped with its own liquid storage reservoir, Type LCR purifiers for cleaning air and steam in up to 2-in. lines do not necessarily require a drainer. They are blown down periodically by a manually operated drain valve. Purifiers are installed immediately ahead of any air-operated equipment. Ninety-nine per cent of moisture and damaging particles are removed by controlled centrifugal scrubbing. They are suited for up to 400-psi and 500° F service. Made by **V. D. Anderson Co.**, 1935 W. 96th St., Cleveland 2, Ohio.

For more details circle NED-378 M9 on enclosed inquiry slip

## DRY MATERIAL SIFTER
### has high speed screen action



Operating without clogging, even with high moisture content products, this stainless steel sanitary sifter processes any free-flowing powder. Its high speed Cirlyptic screen action passes the single screen through the product. Sifter operates with a minimum of tailing and does not overload or jam when bags are being filled or changed. Overall size is 7 ft long by 2 1/2 ft wide. A 24-mesh screen is standard. Machine is driven by a totally enclosed 1/3-hp motor. Made by **Hobam Inc.**, 1720 Military Rd., Buffalo 17, N. Y.

For more details circle NED-379 M9 on enclosed inquiry slip

new! from ETC

**NYLON** INSULATED SOLDERLESS PIGTAIL **CONNECTORS**

FAST - LOW COST
FOOLPROOF - PERMANENT

Translucent natural Nylon in a special closed-end design. Wires and tool are easily positioned to crimp uniformly tight in one quick operation Permanent, fully insulated, vibration-proof! Any number and combination of wires totaling within gage limits. Quick delivery from stock. Sharp-pencil pricing. Color codes available on quantity order.

*Write for Bulletin, Samples, Prices*

ETC INCORPORATED
990 East 67th Street, Cleveland 3, Ohio

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Specify the T-J Spacemaker for longer, more efficient cylinder service

1. METAL PISTON ROD SCRAPER—protects rod packing, cylinder bore and rod surface by removing all foreign particles.
2. NEW "SUPER" CUSHION for air or METALLIC SELF-ALIGNING MASTER CUSHION for oil.
3. HARD CHROME PLATED CYLINDER BORES AND PISTON RODS for greater protection and reduced wear.
4. ONE PIECE PISTON assures better alignment, longer bearing and packing life.
5. FORGED SOLID STEEL HEADS throughout entire line.
6. PILOTED PACKING GLAND with extra long bearing for additional strength and support to piston rod.
7. NO TIE-RODS TO STRETCH—gives you 360° port rotation . . . less space used . . . full strength.
8. STREAMLINED DESIGN . . . operating pressures to 200 PSI, air; 1,000 PSI oil, non-shock.

Write for Bulletin SM 155-4. • The Tomkins-Johnson Co., Jackson, Mich.

For more details circle NED-381 M9 on enclosed inquiry slip

101

A valuable machine, to you, for the speedy, safe, efficient disposition of blueprints, letters, confidential records. The M & M Air Fluff Paper Shredder is also a money saver to those companies that use quantities of paper excelsior—by converting waste paper into valuable excelsior. Adjustable cuts of 1/8", 3/16", 1/4", or 3/8" widths. Models range in productive capacities from 200 to 2500 pounds per hour. Write for descriptive folder.

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For more details circle NED-382 M9 on enclosed inquiry slip

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*All About:*

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- Tests that prove longer operating life at higher watts densities — 5 to 10 times the life of ordinary units.
- Methods for determining your operating needs (charts, etc.) . . . for all this, and more —

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**WATLOW**

ELECTRIC MANUFACTURING CO.
1374 Ferguson Avenue
Saint Louis 14, Missouri

For more details circle NED-383 M9 on enclosed inquiry slip

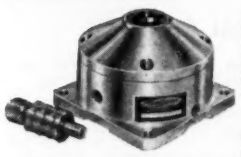


**Handy as a THIRD HAND!**

Model CF-50 furnished with 3-way sleeve valve as shown (less collet).

Modernair AIR-OPERATED

**Collet Holding Fixtures**



USE YOUR OWN COLLETS... Model CF-50 takes #1A or #3C, Model CF-100 takes #5C, Model CF-138 takes #2J standard collets. Collets easily changed from top without disturbing chuck.

EXTRA PORT for coolant, air ejection of work piece, chip blowing, etc.

LOW COST! Model CF-50 with 3-way sleeve valve $65.00
Models CF-100, CF-138, without valve* 99.50

*Modernair can furnish any type of hand or foot-operated 3-way valve desired.

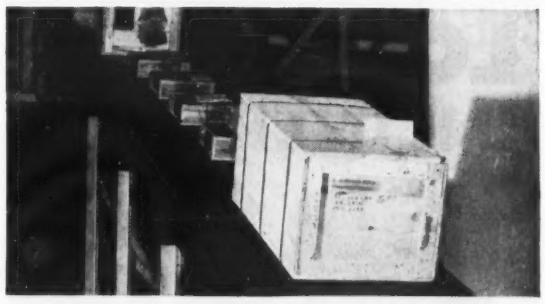
WRITE TODAY FOR LITERATURE, SPECIFICATIONS . . . Please address Dept. F12

Modernair CORPORATION

400 PREDA STREET, SAN LEANDRO, CALIFORNIA
5007 Brookpark Rd., Cleveland 34, Ohio

For more details circle NED-384 M9 on enclosed inquiry slip





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**Quaker Thermoid "RUFF-TOP" CONVEYOR BELTING**

If continuous conveying of packages, cartons, boxes, and other smooth, flat objects is your problem, "Ruff-Top" is the answer. Its thousands of small, rough, irregular-shaped points of soft rubber take a firm grip on the lightest load.

There's a Thermoid-Quaker Belt to do your conveying job at the lowest cost per ton of material moved. Consult your Thermoid distributor, or write today direct to *Thermoid Division, H. K. Porter Company, Inc., Tacony and Comly Streets, Philadelphia 24, Pa.*

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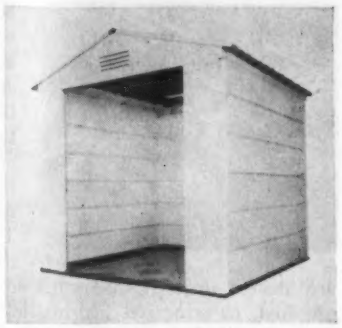
For more details circle NED-385 M9 on enclosed inquiry slip

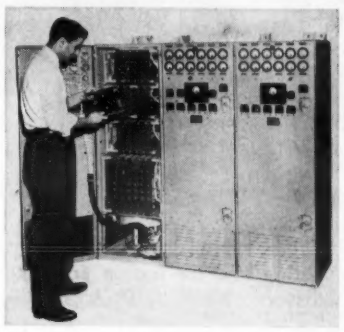

## METAL HOUSE
### has numerous industrial uses



A 56-in. wide by 72-in. high sectional steel overhead Roly-Door is furnished with the prefabricated metal Roly-House. Bonderized steel house is finished in green and white baked-on enamel, has ventilation louvers, and is easily assembled with wrench and screwdriver. Tests show it withstands up to 100-mph wind velocities and snow load stress from 10 to 30 psi. Uses include equipment storage, field office, watchman's house, and workshop. Made by **Morrison Steel Products, Inc.**, 601 Amherst St., Buffalo 7, N. Y.

For more details circle NED-386 M9 on enclosed inquiry slip

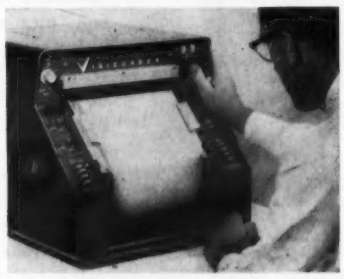
## POWER SUPPLY SYSTEM
### total output is 5.8 kw



Each of the 17 packaged power supplies contained in this fully transistorized power supply system is an individual plug-in component which can be replaced in seconds. The system furnishes 17 different closely regulated and unregulated levels of power for all types of electrical data processing and computing machines. Total output is 5.8 kw. A built-in test circuit quickly tells if any of the 200 power transistors are defective. Unit weighs 1490 lb and measures 5 x 5 x 1¾ ft. Made by **Bogue Electric Mfg. Co.**, 52 Iowa Ave., Paterson 3, N. J.

For more details circle NED-387 M9 on enclosed inquiry slip

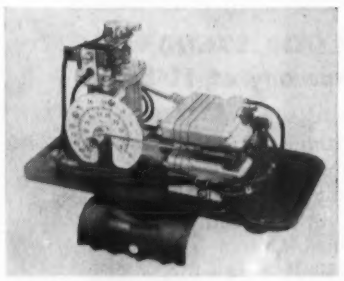
## 24-CHANNEL OSCILLOGRAPH
### direct recording type has 15 speeds



Up to 24 channels of scientific and test data are recorded simultaneously at high speed by the Model 1108 Visicorder, a direct-recording oscillograph. Line now includes models with 14, 24, and 36 channels. High sensitivity information from direct current up to 5000 cps can be recorded. Any of 15 chart speeds from 0.05 to 80 ips are selected by pushbutton. The dry, dustless oscillograph produces instantly readable records. Made by **Minneapolis-Honeywell Regulator Co.**, Heiland Div., 5200 E. Evans Ave., Denver 22, Colo.

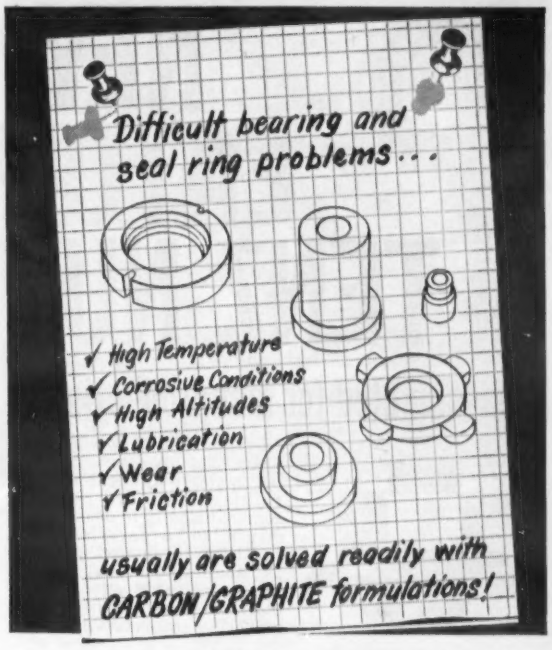
For more details circle NED-388 M9 on enclosed inquiry slip

## FUNCTION GENERATOR
### for flow readout and control



Pneumatic input signal is converted into a characterized output by this function generator. Interchangeable cams to perform various other functions are optional. Housed in a dustproof case, it utilizes a 3 to 15-psi input signal from a transmitter and produces a linearized 3 to 15-psi output signal to a receiver and/or controller. Applications include ratioing of flows of viscous liquids, slurries, or liquids that jell when not in motion; cascade control systems involving flow and a linear variable measurement such as temperature, pressure, or liquid level; and totalizing several measured variables such as temperature and flow. Made by **Taylor Instrument Co.**, 95 Ames St., Rochester 1, N. Y.

For more details circle NED-389 M9 on enclosed inquiry slip


Many standard grades . . . countless specials . . . with physicals to match your performance requirements exactly. Outline your application for a prompt recommendation. STACKPOLE CARBON CO., St. Marys, Pa.

**STACKPOLE**

For more details circle NED-390 M9 on enclosed inquiry slip

**ROCKWELL HYPREGUN**

***Assures positive valve lubrication***

Records prove that Rockwell-Nordstrom *lubricated* valves shut-off tighter and stay in service longer at lower cost than non-lubricated valves. Performance and economy of these valves is greatly improved through proper, scheduled lubrication. The Rockwell Hypregun (above) is a compact, lightweight (39 lb.) pressure valve lubricator that allows fast, precise lubrication of large numbers of valves by even inexperienced maintenance personnel.

The Hypregun is a proven time and money saver for large scale valve lubrication in industrial-process installations. For smaller installations, there are also Rockwell booster guns and bucket pumps to assure the same economy and speed. Whatever your lubricated plug valve, lubricants or lubricating equipment needs, select from Rockwell-Nordstrom, the original and most complete line. Rockwell Manufacturing Co., Pittsburgh 8, Pa.

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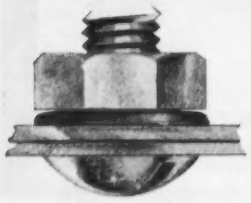
# NEW EATON TENZ-NUT®

## preassembled for fast production...



Now—a spring washer preassembled on a hex nut . . . particularly applicable where finished parts are being assembled and it is desirable to minimize surface marring. Ideal for automated assembly . . . adaptable as sealing nuts. Also available with multi-tooth washers. Write for engineering information.

EATON — RELIANCE DIVISION — MANUFACTURING COMPANY
509 CHARLES AVENUE • MASSILLON, OHIO

SALES OFFICES: NEW YORK • CLEVELAND • DETROIT
CHICAGO • ST. LOUIS • SAN FRANCISCO • LOS ANGELES

▲ For more details circle NED-392 M9 on enclosed inquiry slip ▲

## RATINGS UNAFFECTED BY HEAT increase electrical capacity

Heat is a thief. It can steal a lot of safe, usable capacity out of your plant's electrical system by "overloading" protectors which can't tell heat from current.

But heat never caused a Heinemann circuit breaker to trip, even at full load. It *can't* . . . since Heinemann breakers are hydraulic-magnetic, not thermal, devices. They hold their ratings . . . protect your circuits.

In effect, electrical capacity is increased, since you don't have to cut power usage when the heat's on.

*Ratings unaffected by heat* . . . that's what Heinemann breakers deliver. In the plant, school, commercial building, home, *anywhere*.

Send for a copy of Bulletin 3103

**HEINEMANN ELECTRIC COMPANY**
106 PLUM STREET TRENTON 2, N. J. S.A. 1809

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# DEMING "MOTOR-MOUNT" CENTRIFUGAL PUMPS

*Just one of the many Deming pump features that provide longer life and lower operating costs*

**The DEMING Co.**
1206 BROADWAY • SALEM, OHIO

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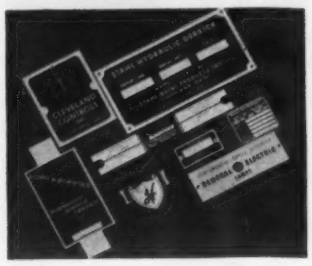
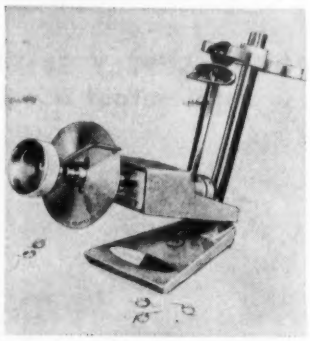
## NAMEPLATES offered in various finishes



Selection of brilliant colors, and various sizes, shapes, and metals are available in these light gage identification and nameplates. Sharp detail makes them suitable for use as panels and dial facings. They are 0.020-in. thick and offered with any design or copy and with enameled, etched, lithographed, or anodized finishes for scratch and weather resistance. Made by **Dickey-Grabler Co.**, 10302 Madison Ave., Cleveland 2, Ohio.

▲ For more details circle NED-395 M9 on enclosed inquiry slip ▲

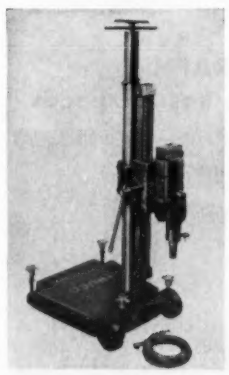
## TORSION SPRING TESTER has ranges up to 100 lb-in.



Production and laboratory testing of torsion springs can be performed rapidly with this tester which features interchangeable arbors and a 360-degree protractor. Extra arbors to fit special springs can be obtained. A torque wrench serves as a sensing element for various ranges from gram-inches to pound-inches. Basic unit can also be used for direct torque testing and for testing and setting small torque screwdrivers. Made by **P. A. Sturtevant Co.**, Addison, Ill.

▲ For more details circle NED-396 M9 on enclosed inquiry slip ▲

## MASONRY DRILLING MACHINE portable line includes electric, gasoline, and air-powered units



Changes in design and construction of Truco portable diamond drilling machines has expanded their range of use. Model A machine offers a 900-rpm motor and 1 to 4-in. OD hole capacity; 430-rpm motor with 2 to 5½-in. OD capacity; or 325-rpm motor with 3 to 6¼-in. OD hole capacity. Model A-1 is powered by a 700-rpm air motor and has a 1 to 6½-in. OD hole capacity, while 500-rpm gasoline engine powered Model A-2 will drill 2 to 6½-in. holes. These models have 19 in. of head travel and can be mounted on wheeled base, baseplate, or truck mount bracket.

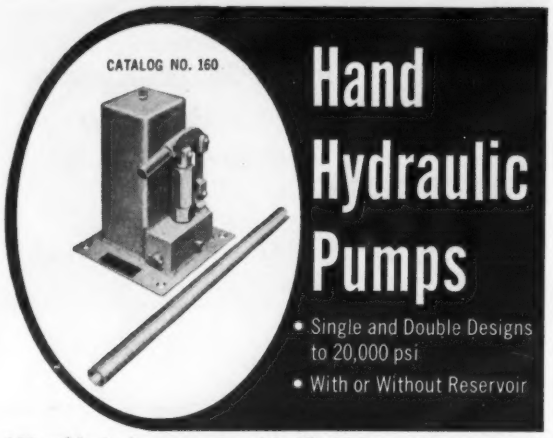
Model B machine (illustrated) has electric motors of 750, 350, and 78 rpm which afford respective capacities of 1 to 6¼, 2 to 9, and 7 to 14-in. OD. Model B-1 is the same unit with 475, 300, and 200-rpm air motors providing capacities of 2 to 9, 3 to 12, and 4½ to 14 in. Concealed rubber tired casters and rubber tired wheels are incorporated. Made by **Wheel Trueing Tool Co.**, Masonry Drilling Div., 3200 W. Davison Ave., Detroit 38, Mich.

▲ For more details circle NED-397 M9 on enclosed inquiry slip ▲

## PUSHBUTTON FLOOR STAND pedestal takes any of 11 boxes

Oiltight pushbutton enclosures of sheet steel accommodating from 1 to 25 oiltight pushbuttons are available for mounting on this pedestal floor stand. All standard makes of buttons fit in any of 11 boxes on the 42-in. high, 4 x 4-in. square column which may be bolted to the floor. Neoprene gaskets keep out oil and dust and prevent vibration. A gasketed removable cover over the wire-pulling hole is near the base. Enclosures are inclined 30 degrees from vertical when attached to the stand. Made by **Hoffman Engineering Corp.**, 1017 Tyler St., Anoka, Minn.

▲ For more details circle NED-398 M9 on enclosed inquiry slip ▲


160 cubic inch reservoir with 8"x 8" base plate and 18" long handle.

Available with optional size pistons ⅜", ½", ¾", 1" and 1½".

We specialize in the manufacture of hand pump units which operate in temperatures from −65° F. to +160° F. and with any capacity reservoirs required. Pumps can be furnished on special order with custom seals to handle various aircraft types of fuels such as Pydraul, Skydrol, Oronite, etc.

The single pump with ½", ¾", 1" or 1½" piston is now available in stainless steel.

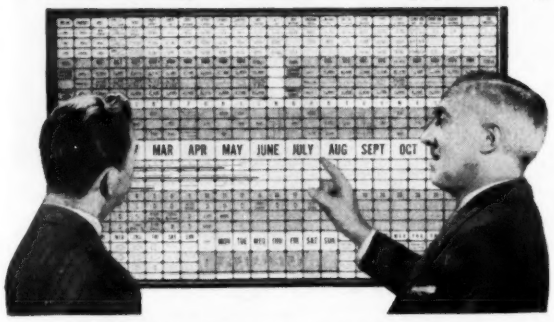
*for additional information write:*

**WILLIAM S. PINE**
*hydraulic hand pumps for 1001 uses*
1635 East 22nd St., Los Angeles 11, Calif.

▲ For more details circle NED-399 M9 on enclosed inquiry slip ▲



# You Get Things Done Better By Seeing What's Happening




**BOARDMASTER VISUAL CONTROL**

★ Gives Graphic Picture of Your Operations in Color.
★ Facts at a Glance - Saves Time and Prevents Errors.
★ A Simple, Flexible Tool - Easily Adapted to Your Needs.
★ Easy to Use. Type or Write on Cards, Snap on Board.
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★ Compact, Attractive. Made of Metal. 400,000 in Use.

Complete Price $49.50 Including Cards

**FREE** 24-Page ILLUSTRATED BOOKLET N-300 Without Obligation

**GRAPHIC SYSTEMS, 55 West 42nd St., New York 36, N.Y.**

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# LOW COST INCINERATOR

BURNS TRASH SAFELY OUTDOORS

Only $110.00 COMPLETE

## NO INSTALLATION COST

Burn wrappings, sweepings, papers, cartons, packing, rags, food waste, safely outdoors. Scientific draft control ends fire hazards of flying ash, sparks, burning blowing papers. Burns damp, green, or dry refuse to fine ash in any weather. Minimizes smoke and smell, needs no watching. Safe for use 10' from buildings. Stands 52" high x 35" square at base. 10 bushel burning capacity. Complete with hinged hood, ash pan base and grate and cleanout door. Made of aluminized steel (molten aluminum bonded to steel) with replaceable inner steel panel construction for long life. Shipped assembled—weight 170 lbs. Only $110.00 F.O.B. Cleveland. Satisfaction guaranteed. Other sizes available.

*Write for* **FREE** *Folder*

**ALSTO COMPANY**
Dept. NE-14 4007 Detroit Ave. Cleveland 13, Ohio

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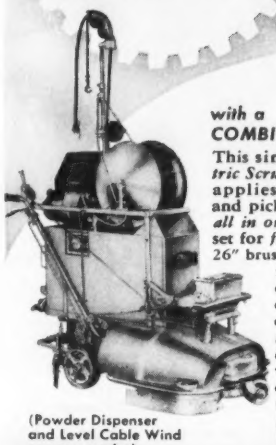
MECHANIZE all Scrubbing Operations into 1



with a COMBINATION SCRUBBER-VAC!

This single unit, *Finnell's 213P Electric Scrubber-Vac* for large-area floors, applies the cleanser, scrubs, flushes, and picks up (damp-dries the floor) — *all in one operation!* No switches to set for *fast* or *slow*. *Self-propelled* . . . 26" brush spread. Cleans up to 8,750 sq. ft. per hour (and more in some cases), depending upon floor condition and congestion. Available on lease or purchase plan. *Finnell* makes a full range of sizes, and *battery, gasoline,* and *propane* as well as *electric* models. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 5512 East St., Elkhart, Ind.

(Powder Dispenser and Level Cable Wind are accessories)

FINNELL SYSTEM, INC. Originators of Power Scrubbing and Polishing Machines — FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

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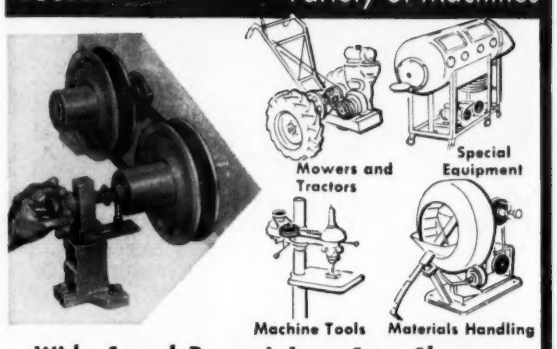
SPEED SELECTOR VARIABLE PITCH SHEAVES Control Speeds on Variety of Machines




Wide Speed Range! Low Cost Sheaves

Speed Selector Sheaves can give your machines or equipment extra wide-range speed control on fixed centers. Efficient, rugged, simple to use — low in cost! Write for Illustrated Bulletin.

CATALOG FREE! WRITE TODAY

SPEED SELECTOR INC.
P.O. BOX 312-N • CHAGRIN FALLS, OHIO

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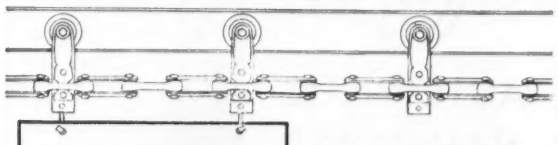
LINK-BELT conveyor TROLLEYS



MADE IN LINK-BELT'S BALL AND ROLLER BEARING PLANT

Trolleys are only as good as their bearings. That's why Link-Belt trolleys are *MADE IN A BEARING PLANT BY BEARING SPECIALISTS.*

Simple and rugged, Link-Belt ball-bearing trolleys maintain rolling contact in all positions . . . create minimum power demand . . . give long, trouble-free service.

Available in 2- or 4-wheel types, riveted or bolted, for 3-, 4- or 6-in. I-beams.

NEW TROLLEY BOOK 2636 is now available. Send for your copy today!

LINK-BELT
BALL BEARING CONVEYOR TROLLEYS
LINK-BELT COMPANY, Prudential Plaza, Dept. NED, Chicago 1, Ill. 15,006

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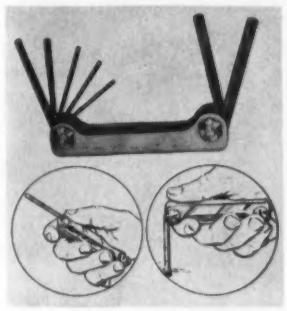
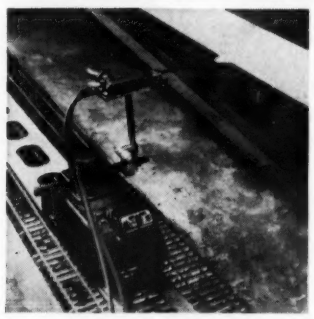
## HEX WRENCH SETS
### three sizes fit all hex sockets



Three sizes of Fold-Uni-Key hex wrench sets fit hex socket screws in sizes from No. 5 to ¾-in. General purpose set No. 71 has seven keys for hex sockets with widths from 1/16 to 7/32 in. Heavy duty No. 61 set has six keys for ⅛ to 5/16-in. sizes, and No. 51 five-key set fits 3/16 to ⅜-in. sockets. These heat treated alloy steel wrench sets open and close like a jackknife. Keys can be used at an angle like a wrench or straight like a screwdriver. Made by **Eklind Tool & Mfg. Co.**, 2627 N. Western Ave., Chicago 47, Ill.

▲ For more details circle NED-405 M9 on enclosed inquiry slip ▲

## CERAMIC SPRAYING PROCESS
### applies refractory coating to metal surfaces for high heat protection



Refractory coatings are applied to metal surfaces to protect them from oxidation and other high temperature effects by the Flame Ceramics spraying process. Method involves injecting solid crystalline particles of oxygen-containing material into a gaseous stream being fed into a continuous flame generating device. Particles are maintained at sintering temperature and impinge on the surface to form a crystalline deposit. Glass, carbon, concrete, refractories, and materials other than metal can also be coated by the process.

Current uses include coating the combustion chamber of the Talos missile's ramjet engine to withstand up to 5500° F; coating of piston crowns, valves and cylinder heads of diesel locomotives; and the coating of furnace rollers used to make silicon steel (illustrated). A wide variety of powdered materials can be used in the process. Coating service is offered by **Continental Coating Corp.**, 17706 Miles Ave., Cleveland 28, Ohio.

▲ For more details circle NED-406 M9 on enclosed inquiry slip ▲

## WORD INDICATOR LIGHT
### has large legend area

Three rows of 0.125-in. high characters, 14 to the row, can be accommodated on the large-legend Roto-Tellite word indicator light. Visible legend area is 15/32 x 1¼ in. and also takes one or two 0.188-in. rows, or one 0.250 or 0.375-in. row. Unit is rebulbed from the front without tools. It can be joined horizontally up to four channels and/or stacked vertically up to ten channels. Unit assemblies are available with 1 to 20 channels. Various types of lens are offered, as are removable control capsules for master test, diode dim-bright operation, and current feedback prevention. Made by **Master Specialties Co.**, 956 E. 108th St., Los Angeles 59, Calif.

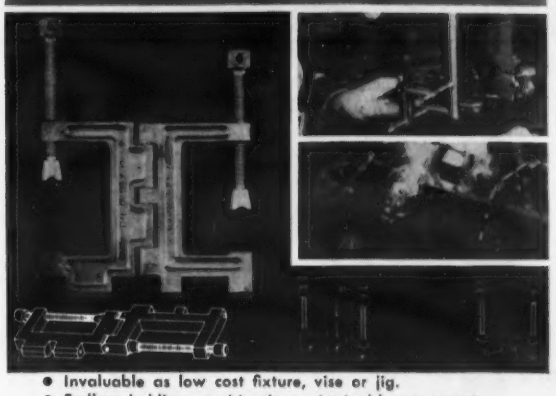
▲ For more details circle NED-407 M9 on enclosed inquiry slip ▲

## PORTABLE LABEL MAKER
### uses plastic or metal tapes

Midgie Matic hand-held embosser - labeler makes cut - to - size, ready - to - use labels from plastic and metal tapes contained in replaceable magazines. Heat treated alloy embossing dies produce sharp, legible 5/32-in. raised letters. A punch for mounting holes and a cutoff blade are built in. Magazine-loading tapes are available with pressure-sensitive adhesive backing in aluminum and four colors of vinyl plastic as well as in Monel, stainless steel, natural and colored aluminum, copper, lead, and vinyl plastic without adhesive backing. Price is $47. Offered by **Roovers-Lotsch Corp.**, 521 Bridge St., Old Forge, Pa.

▲ For more details circle NED-408 M9 on enclosed inquiry slip ▲


A Holding Problem?
. . . MERRILL THIRD HAND CLAMPS Have The Right Angle For It!



- Invaluable as low cost fixture, vise or jig.
- Endless holding combinations obtainable at preset angles of 45°, 90° and 180°.
- Assembles in minutes for most complicated setups.
- Indispensable in any operation such as welding, fastening and machining.
- Costs no more than high quality forged "C" Clamps, yet offers many more advantages.
- Available in 2" and 4" sizes.

U-27 For complete information, ask for Catalog TH

MERRILL BROTHERS
56-62 Arnold Ave., Maspeth, N. Y.

▲ For more details circle NED-409 M9 on enclosed inquiry slip ▲



Now! *Hoover Quality* in SPHERICAL Roller Bearings

Now available! . . . *Hoover Quality* spherical roller bearings that assure superior performance and longer life because rollers and raceways are *Super Finished* to mirror-like smoothness.

Double row of large-size rollers provides capacity for heavy radial and shock loads. High contact angle provides substantial thrust capacity in either direction.

*Hoover Quality* spherical roller bearings accommodate shaft misalignment in any direction. Roller guidance features, plus precision matching of *Super Finished* rollers and raceways, assure uniform load distribution, low operating temperatures and enduring performance. Hoover offers a complete range of series and sizes in cylindrical or tapered bore.

hoover
BALL AND BEARING COMPANY
5400 South State Road, Ann Arbor, Michigan

Zone Sales Offices and Warehouses: 8581 South Chicago, Chicago 17, Illinois; 290 Lodi Street, Hackensack, New Jersey; 2020 South Figueroa, Los Angeles 7, California

Hoover Ball and Bearing Company NED-12
5400 South State Road, Ann Arbor, Michigan
Please send new bulletin No. 113 describing Hoover spherical roller bearings.
Name
Title
Company
Address
City State

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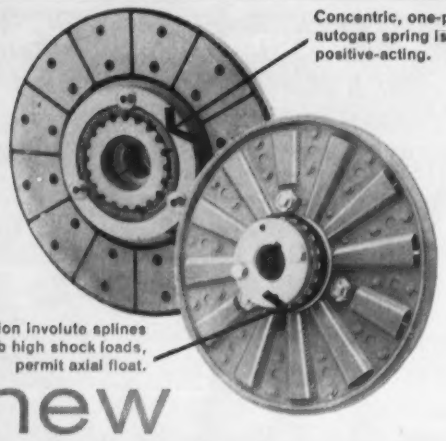



new

**SPLINE-DRIVE armature**
for Warner electric brakes and clutches

Here's how to slash maintenance downtime, prolong armature life, and increase product values on high-cycle machinery. Warner's new mounting distributes the load evenly on multiple splines. Fast alignment and easy assembly reduce total cost. Patented one-piece autogap spring gives efficient snap-action release. Wear take-up is automatic. Four sizes: 825 through 1525. Write for Bulletin No. P-68.

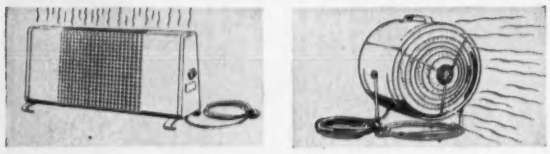
WARNER **Warner Electric Brake & Clutch Co.**
Beloit, Wisconsin

▲ For more details circle NED-411 M9 on enclosed inquiry slip ▲



For portable use or for permanent installation . . .

**Get quick comfort for hard-to-heat areas: G-E space heaters can be delivered today**



General Electric space heaters of both natural convection and forced convection types are now available for quick delivery from your nearby G-E distributor. General Electric space heaters are:

**EASY TO INSTALL:** Just mount them on the floor, wall or ceiling and plug them in. You have immediate heat for drafty areas and buildings not serviced by your heating plant. No plumbing is required.

**CLEAN:** General Electric heaters give off no odors, dirt, soot, or obnoxious gases. Quick, clean heat is available at the turn of a switch.

**READILY PORTABLE:** Sturdily constructed but light in weight, General Electric space heaters can be moved easily from one place to another.

**FREE BULLETINS**

For more information, write Section 723-33, General Electric Company, Schenectady 5, N. Y., and ask for GEA-6361, HANDY SELECTOR GUIDE FOR HEATING ROOMS OR BUILDINGS, and GEC-1005 CATALOG OF GENERAL ELECTRIC HEATERS AND DEVICES.

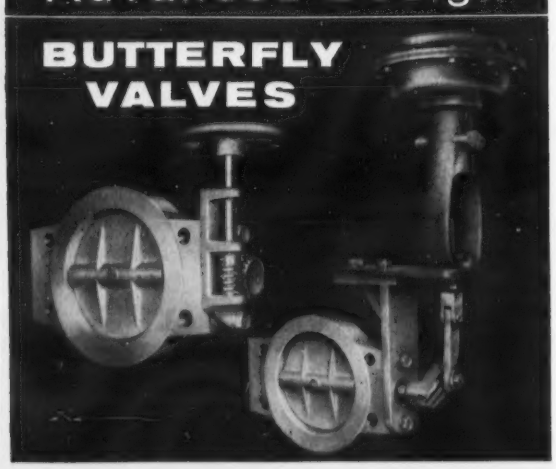
**GENERAL ELECTRIC**

▲ For more details circle NED-412 M9 on enclosed inquiry slip ▲



Advanced Design

**BUTTERFLY VALVES**



NOW . . . an extensive line of Butterfly Valve types and sizes with many features.

- Variety of actuators
- Soft and angle seating
- Variety of body linings
- Adjustable for 60° or 90° operation
- Wide range of sizes in steel or iron

*Whatever your needs,* specify Masoneilan Butterfly Valves. Call or write for catalog.

**MASON-NEILAN**
*Division of Worthington Corporation*
69 Nahatan Street, Norwood, Mass.

MN9-20

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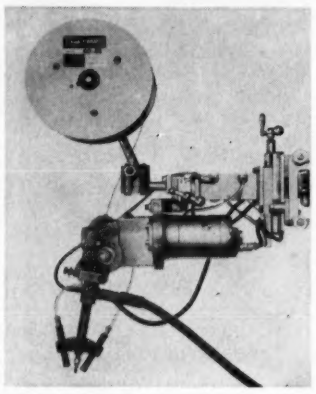
## MANUAL HOIST-PULLER
### enables one man to move 3000 lb

All stress points of the Power-Pull manual hoist-puller are high tensile strength manganese bronze and frames are steel. The improved model with 3/16-in. preformed aircraft cable weighs only 7½ lb, yet enables one man to lift, lower, or move over 3000 lb. Unit is tested to 50 per cent overload. Cable is easily replaced by removing a setscrew with a hex socket wrench. Redesigned ¾ and 1-ton models also have replaceable cable. Attachments and adapters are available for special uses. Made by **American Gage & Mfg. Co.**, Dept. 0-123, 125 Bayard St., Dayton 1, Ohio.

▲ For more details circle NED-414 M9 on enclosed inquiry slip ▲

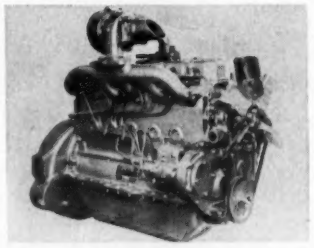
## AUTOMATIC $CO_2$ WELDER
### 600-amp unit feeds wire at 1200 ipm



Weld wire is fed continuously at speeds from 55 to 1200 ipm by this 600-amp CP C-OMatic $CO_2$ welder for high speed welding of mild and medium carbon steels. Power source provides infinitely variable voltage control from 0 to 45 v. Welding head is powered by a 1/6-hp infinitely variable-speed motor and has a two-speed mechanical gear shift. Large bus-bar power terminals facilitate connection of welding and ground cables. A third bus bar furnishes constant 180-amp power for tack welding. Made by **A. O. Smith Corp.**, Welding Products Div., 3533 N. 27th St., Milwaukee 1, Wis.

▲ For more details circle NED-415 M9 on enclosed inquiry slip ▲

## DIESEL ENGINES
### for trucks and industrial use



Line of diesel engines ranging from 50 to 350 hp in 3, 4, 6, and 8-cylinder models includes units designed specifically for light and medium trucks as well as materials handling equipment, tractors, construction machinery, boats, and industrial equipment. Several of the new diesels will burn various fuels, including diesel oil, kerosine, jet fuel, and gasoline. No adjustment is required when fuels are changed. The 6-cylinder, 150-hp, turbo-charged diesel is shown. Made by **Hercules Motors Corp.**, 101 11th St. S.E., Canton 2, Ohio.

▲ For more details circle NED-416 M9 on enclosed inquiry slip ▲

## VARIABLE TRANSFORMERS
### for portable or fixed-mount use

Ratings up to 7.5 amp are available in stocked overvoltage type of cased variable transformer, used where maximum output voltage exceeds input voltage. Also available to order are cased no-overvoltage type in ratings up to 10 amp, used where maximum output voltage equals line input voltage. Fixed mounting enclosure can be hung on panel or wall. Portable enclosure has an on-off switch, line cord, output receptacle, and fuse. Deluxe portable enclosure, offered in the largest frame size only, also includes overvoltage/no-overvoltage selection switch, circuit breaker, and handle. Made by **Ohmite Mfg. Co.**, 3654 Howard St., Skokie, Ill.

▲ For more details circle NED-417 M9 on enclosed inquiry slip ▲


ANNOUNCING NEW HIGH PRODUCTION END FINISHER

for
- TUBE
- ROD
- PIPE

**New Model 600 Speeds Chamfering • Deburring • Facing • Drilling • Reaming • Tube-End Spinning**

- Rugged new design for high production, easy operation, faster feeds on simultaneous inside-outside deburring, chamfering, facing.
- New rigid, unitized spindle frame and heavier base retains close concentricity between the tool holder and chuck jaws.
- Simplified setup, operation, maintenance . . . one-minute speed changes with new hinged safety guard and pivoted motor mount.
- Production to 800 ends an hour . . . capacity to 2" O.D. . . . air operation, larger units or special machines are also available.

Write for catalog giving cost cutting features, production data, complete specifications.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery
641 WALNUT • AURORA, ILLINOIS

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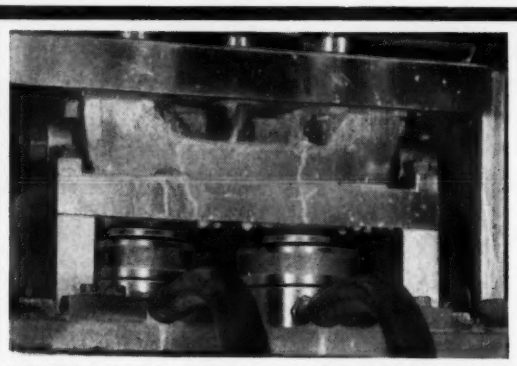

**HYDRAULIC FIXTURE LOCKING COMPONENTS BOOST MACHINE OUTPUT!**

- COMPACT—BUILD INTO FIXTURES EASILY
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- ULTIMATE SPEED IN WORK LOADING
- A PERMANENT INVESTMENT—TRANSFERS FROM FIXTURE TO FIXTURE
- SINGLE OR MULTIPLE LOCKING HEADS AVAILABLE WITH MATCHING AIR-HYDRAULIC BOOSTER SYSTEMS

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**WILTON**
WILTON TOOL MFG. CO., INC., NED 129
SCHILLER PARK, ILLINOIS

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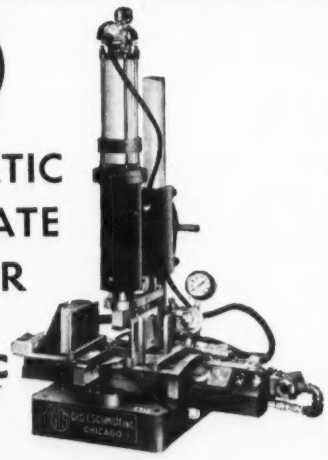
GTS

AUTOMATIC NAMEPLATE MARKER
*with*
AUTOMATIC FEED



This GTS unit marks nameplates at the rate of 3000-3600 per hour with perfect uniformity. Operator merely loads the automatic feed and unloads the discharge stacker. Machine can be equipped for consecutive serial numbering. Inquire at GTS for the finest in marking equipment.

*IF IT'S WORTH MAKING, IT'S WORTH MARKING.*

**GEO. T. SCHMIDT, INC.**
1800 W. Belle Plaine Avenue
Chicago 13, Illinois

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**Webster** DIRECT READING

HYDRAULIC TYPE

**FORCE GAUGES**

Measures electrode pressure on spot welders and roll welders. Makes compressive tests on forming, dimpling and upsetting operations. Also useful for weighing. Insulated contact surface prevents damage if welder is accidently fired. Easy setups, no delicate mechanisms, 5 ranges: 0-1000, 6000, 10,000, 20,000, 40,000 lbs. 3½" diameter gauge with accuracy to 1%. Reads directly in pounds—no conversion scales. Write for details.

**Webster** INSTRUMENT, INC.

Dept. N, 11856 Mississippi Ave., Los Angeles 25, California

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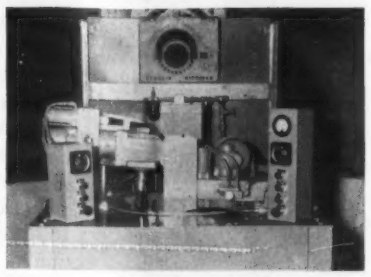
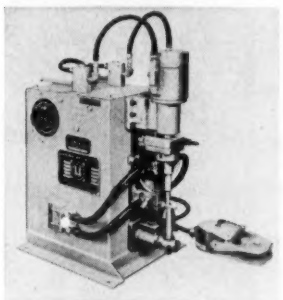
## FLUID ABRASIVE FINISHER
### has two independent spindle heads



Parts mounted for finishing on the MM-2-HS-3000 Mechamatic machine are submerged while rotating at about 2000 sfpm in a fluid abrasive mass. Parts of various sizes and shapes or a single part in production quantities can be processed. Two independently operated spindle heads allow the operator to service one air-operated spindle while the other is in process. Process is automatic, except for loading and unloading. Capacity is 250 pieces per hour in a 15-sec cycle. Maximum part diameter is 6 in. Made by **Mecha-Finish Corp.**, Box 308, Sturgis, Mich.

▲ For more details circle NED-423 M9 on enclosed inquiry slip ▲

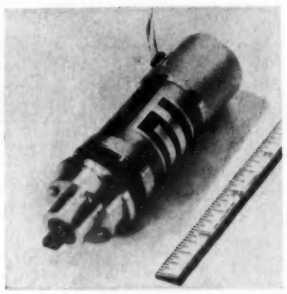
## PRESS TYPE WELDER
### for extra fine and critical welding



Capacities from 5 to 50 kva are available in this small press type bench welder for fine and critical welding. The single-phase unit resistance welds all types of weldable metals to rigid specifications. It is air operated, has adjustable upper and lower arms and holders, and is equipped with a foot switch. Illustrated model welds 0.042-in. stainless steel wire to 0.312-in. ID stainless tubing with a 0.045-in. wall thickness. Made by **Electric Arc, Inc.**, Universal Electroweld Div., 152-1 Jelliff Ave., Newark 8, N. J.

▲ For more details circle NED-424 M9 on enclosed inquiry slip ▲

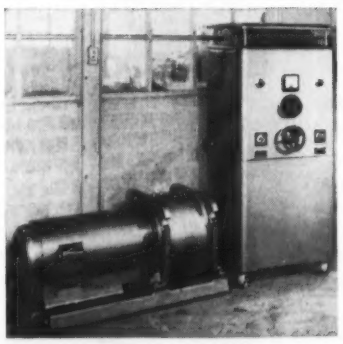
## MINIATURE DC MOTOR
### can include brake, gears, governor



Series, split-series, shunt, or universal windings are offered in Type GJ direct current motors with continuous duty ratings up to 1/100 hp. Diameter is 1⅜ in. When equipped with an integral brake (which adds 1⅛ in. to over-all length), full load speed stops in 2.9 revolutions are possible. Various governors as well as integral planetary speed reducers in many ratios can be used. They operate on 6 to 75 v dc with output speeds from 6000 to 13,000 rpm. Made by **Globe Industries, Inc.**, 1784 Stanley Ave., Dayton 4, Ohio.

▲ For more details circle NED-425 M9 on enclosed inquiry slip ▲

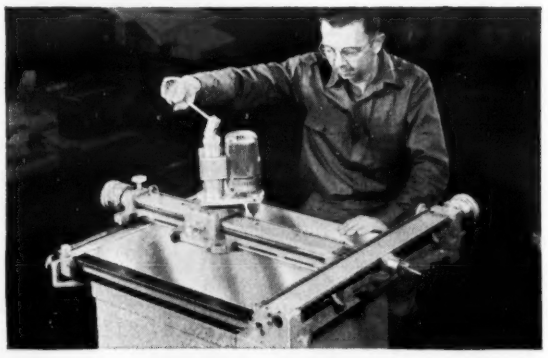
## POWER SUPPLY
### for spark erosion diesinking



Rapid sinking of die cavities and odd-shaped holes in any metal is achieved with a two-step process, the first being a high speed roughing with a spark erosion machine using the Sparcatron R.I.G. power supply. Second step employs the normal spark cutting power supply to obtain final size and finish. Any precision spark erosion machine may be used with an appropriately shaped electrode of aluminum, Zamak alloy, copper, or brass. Radii, fillets, and complex shapes are reproduced on the roughing cut, with less than 1/32-in. left for finishing. Sparcatron R.I.G. power supply consists of a rotary impulse general and control cabinet with four settings. Maximum output is 250 amp at 25 v. Power requirement is 12.3 kva, 220/440 v, three-phase, 60 cycles. Made by **Easco Products, Inc.**, Box 587, Ypsilanti, Mich.

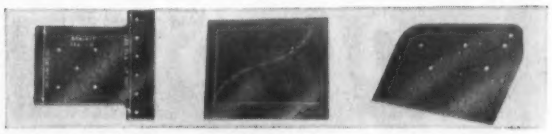
▲ For more details circle NED-426 M9 on enclosed inquiry slip ▲


layout and template making time cut in half...



THE NEW **STRIPPIT FLEX-O-DRILL**

- **DRILLS, REAMS, SCRIBES, CENTER PUNCHES** to ± 0.002" WITHOUT base line drawing or height gauge layout!
- **EASY, ACCURATE POSITIONING**—quickly set to any reference point and to nearest 0.100" by adjustable steel tapes reading in both directions from zero. Micrometric gauges then bring settings to nearest 0.001". No optical scanning device needed.
- **LASTING ACCURACY!** Table is an actual ground surface plate. Bridge assembly is of heavy, accurately machined castings. Lead screws are precision ground and engaged only during micrometic gauge settings to minimize wear. All parts are corrosion-resistant. Bearings are protected against dust and chips by felt shields. Drill motor is heavy-duty industrial type.
- **¼" CAPACITY** in mild steel—stock up to 24" width, any length.
- **ALSO A PROVEN MONEY-SAVER** on pilot runs, low unit production.



*Template drilled by Flex-O-Drill* — *Layout scribed by Flex-O-Drill* — *Flex-O-Drill work piece*

**WRITE FOR LITERATURE TODAY,** and an actual demonstration at your plant:

**WALES STRIPPIT INC.** — SWIFT & HOUDAILLE INDUSTRIES, INC.

227 Buell Road, Akron, New York

*In Canada: Strippit Tool & Machine Company, Brampton, Ont.*

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**HOSE ASSEMBLY SERVICE**

It's a fact. We are your leading source for permanently attached hose assemblies. Right in our own service shop, swaged hose assemblies can be made to your order... any size... any type... any pressure... any length... any quantity in minutes. You can't afford to overlook this time-saving service. Up to 2" hose—for any industrial application.

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FORT WAYNE DIVISION
Dept. NED-12, 128 W. Washington Blvd.
Fort Wayne, Indiana

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**WEATHERHEAD** answers every **TUBE FITTING** need

complete range — flared, flareless, or pipe fittings. Valves and drain cocks.

brass, stainless steel, carbon steel

pressures up to 10,000 p.s.i.

sizes for ⅛" to 2" O.D. tubing ⅛" to 2" pipe

quantities for large production for small maintenance needs

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Please send me full information on the new Bruning Electric Eraser.

Name_____ Title_____
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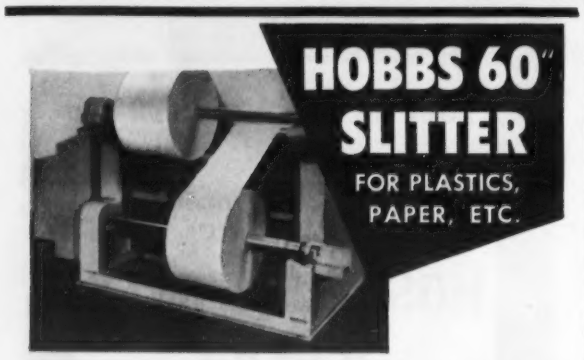


**Polaroid Corporation, WALTHAM, MASS.**
**One of Many Prominent Users**

Polaroid Corporation of Waltham, Mass. is one of many prominent companies which have found the new Hobbs 60" Slitter and Rewinder ideal for converting. Adaptations of the Hobbs Slitter can be made for converting delicate film, heavy, tough plastics, paper or other similar materials.

This machine is available in 40", 50" and 60" sizes as well as 72" and with single or double shaft windup. Controls for starting, stopping, tension adjustment and speed variations are within easy reach of the operator. Other features include shear type cutters, automatic web guide, static eliminator and blower type trim remover with receptacle.

EST 1892 Write for Hobbs 60" Slitter circular.
HOBBS MANUFACTURING CO.
41L SALISBURY ST., WORCESTER 5, MASS.
Representatives in Irvington, N. J., Chicago, Cleveland, Louisville, Los Angeles, Greenville, S. C. and Toronto, Can., and other Principal Cities
WINDERS • SHEARS (Hand & Automatic) • DIE PRESSES • SLITTERS

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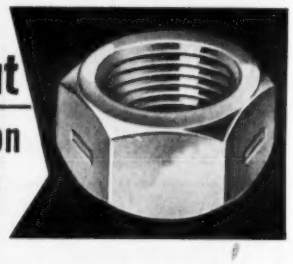
NEW
**Centerlock Nut**
**saves production time...speeds application**



Here is a new low cost lock nut that can be applied from either end, double chamfered, with the locking feature in the center. The greater speed in application of these Centerlock Nuts can make definite savings in production time and provide low cost fastening. Ideal for customer assembled products.

*The New Centerlock...*

• Can be automatically fed • Will lock wherever turned on bolt • Does not depend on friction against work for locking • Can be applied from either end • Will not damage bolt threads • Available in steel, Brass, aluminum or stainless on special order • Offered in finished series, double chamfered from ¼" thru ⅞" in fine or coarse threads. Machine screw sizes #8, #10, and #12 also available. Heavy series made to special order only • Also in closed and open end acorn type • Large inventories carried for immediate shipment. 119

Write for samples and NEW CATALOG today
GRIP NUT COMPANY
106 Maple Ave. South Whitley, Indiana

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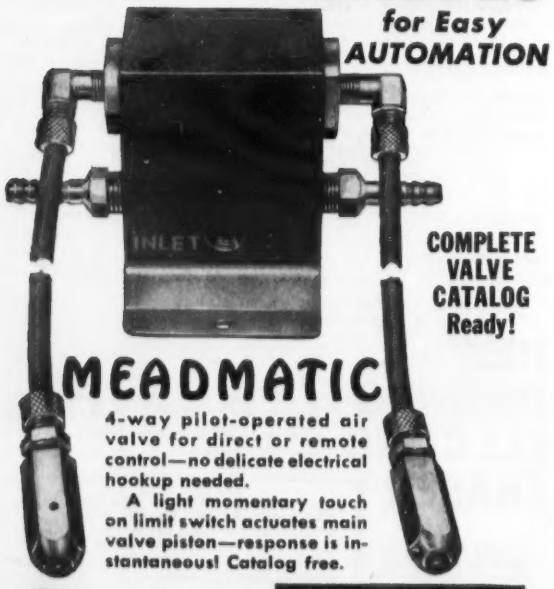
**Direct-Air VALVES**
for Easy AUTOMATION




COMPLETE VALVE CATALOG Ready!

**MEADMATIC**

4-way pilot-operated air valve for direct or remote control—no delicate electrical hookup needed.

A light momentary touch on limit switch actuates main valve piston—response is instantaneous! Catalog free.

Write today!
MEAD SPECIALTIES COMPANY
4114 N. Knox Ave., Dept. NA-129, Chicago 41, Ill.
PATHFINDER IN AIR POWER AUTOMATION

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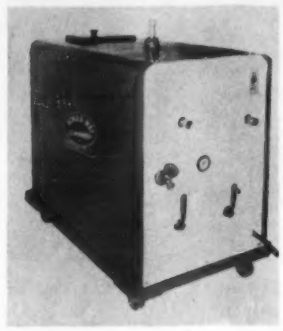
## PRESSURE WASHING UNIT
### delivers 3 gal of solution/minute



Water and chemically proved detergents do all the cleaning when using this caster-mounted pressure washer. Unit delivers up to 3 gpm of solution at the gun under sustained pressure of 150 psi to clean air conditioning cores, coils, and filters. Overhead space heaters can be flush-cleaned on the spot. Set of rubberized bags with run-off sleeves is available to trap and conduct away all dirty water. Solutions for cleaning car and truck fleets as well as aluminum and painted surfaces are available. Made by **Pressure Wash Mfg. Inc.**, 2333 W. Wells St., Milwaukee 3, Wis.

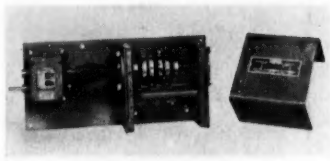
▲ For more details circle NED-433 M9 on enclosed inquiry slip ▲

## CONDUCTIVITY METER
### for electrolytic solutions

Self-contained and fully portable Hydrion meter quickly and easily measures the specific conductance of solutions anywhere. It can be used to check liquids in industrial, processing, petroleum, chemical, plating, and other operations. The battery powered meter reads directly in parts per million in saline or other solutions. It has a selector for 1 or 10-ppm readings in range to 100,000 ppm and is priced at $130. Made by **Carma Mfg. Co.**, 1879 Mullin Ave., Torrance, Calif.

▲ For more details circle NED-434 M9 on enclosed inquiry slip ▲

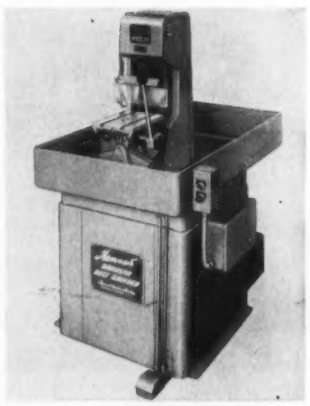
## ROTATING LIMIT SWITCH
### has speed reducer with 10 ratios



Compact, heavy duty, general purpose rotating cam limit switches are available in standard NEMA Type 1, 4, 5, 7, 9, and 12 enclosures with from 1 to 12 circuits. One cam is employed for all settings. They incorporate a speed reducer with any of ten gear ratios from 25:1 to 900:1. Other ratios can be specified. Mounted on a steel bed plate, the reducer is connected to the switch shaft by a flexible coupling. Snap-action switch has one normally open and one normally closed contact, both of which are electrically operated. Made by **Gemco Electric Co.**, 25685 W. Eight Mile Rd., Detroit 40, Mich.

▲ For more details circle NED-435 M9 on enclosed inquiry slip ▲

## ABRASIVE BELT GRINDER
### manual and semiautomatic models



Air tensioning built into the Model VHP-6 abrasive belt grinder assures uniform belt tension and sufficient belt stretch for long belt life. It has a water cooled and lubricated platen and offers several styles of platen faces as options. For dry manual operation, the hood has an exhaust outlet. A Dus-Kolector is an extra. A table which tilts 15 degrees up and 45 degrees down is available for dry or wet manual operation. An oscillating-tilting table is offered for wet semiautomatic operation. Foot controlled air infeed is optional with this table. Machine uses a 6 x 60-in. abrasive belt which runs at 3400 sfpm. Belt working surface is 6 x 9½ in. and platen surface is 6 x 12½ in. Made by **Hammond Machinery Builders, Inc.**, 1623 Douglas Ave., Kalamazoo, Mich.

▲ For more details circle NED-436 M9 on enclosed inquiry slip ▲


*For strength, efficiency, economy*

**UNION METAL**

Union Metal material handling equipment is found throughout industry: increasing production line efficiency, keeping floor areas clear, making maximum use of every cubic foot of space. For detailed information on the wide range of available designs and sizes, write The Union Metal Manufacturing Company, Canton 5, Ohio.

**UNION METAL**
*Material Handling Equipment*

▲ For more details circle NED-4



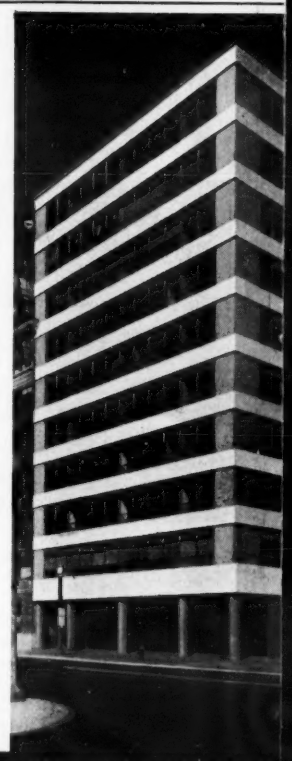
**Electrical Protection goes MODERN with BUSS Fuses**

*In St. Louis' Newest, Multi-Storied Office Building.*

The Thomas Jefferson Building is another outstanding example of BUSS Hi-Cap and FUSETRON dual-element fuses meeting the requirements for a modern protective device.

Today's electrical networks, with tremendous capacities, have emphasized the need for a superior protective device that can safely and dependably handle faults of great magnitude.

BUSS Hi-Cap and FUSETRON fuses, because of their high interrupting capacity and life-time dependability, have become the natural choice in both new installations and when electrical systems are being modernized.



ANOTHER BUSS HI-CAP AND FUSETRON FUSE INSTALLATION

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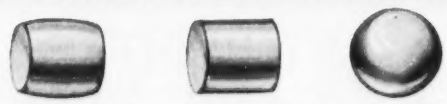
SKF and all the authorized SKF distribu
wish you a very
Merry Christmas



Spherical, Cylindrical, Ball, Tyson Tapered and REED Mi

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37 M9 on enclosed inquiry slip ▲

**MAXIMUM SAFETY**
The interrupting rating of BUSS Hi-Cap fuses is 200,000 rms symmetrical — and for FUSETRON fuses it is 100,000 rms symmetrical.

**LIFETIME DEPENDABILITY**
Unlike mechanically operated devices, a fuse has no hinges, pivots or contacts to stick or get out of order.

*for more information*
On BUSS Hi-Cap Fuses (loads above 600 amps) . . . *. . . write for bulletin HCS*
On FUSETRON dual-element Fuses (loads of 0 to 600 amps) . . . *. . . write for bulletin FIS*

Bussmann Mfg. Division, *McGraw-Edison Co.* St. Louis 7, Mo.

38 M9 on enclosed inquiry slip ▲

EVERY TYPE—EVERY USE
SKF®
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
*iature Bearings
*REG. U.S. PAT. OFF.

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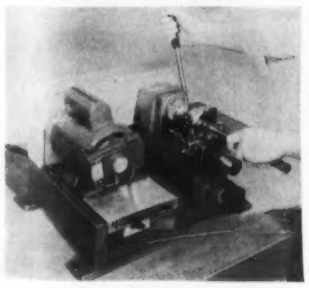
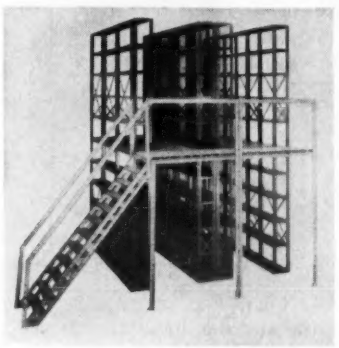
## TUBE & ROD END FINISHER
### deburrs, faces, chamfers, drills



Redesigned for production use, Model 600 end finishing machine will deburr, face, and chamfer tube or rod ends simultaneously. It can also be used for drilling, reaming, and light spinning operations. Capacity is up to 800 pieces per hour. Improved rigidity permits heavy cuts and facilitates spinning the ends of nonferrous tubes. Drive is with a ½-hp motor and an enclosed eight-speed belt drive, adjustable in range of 760 to 3920 rpm. Long chuck jaws grip work securely without marring. Adjustable stock stop swivels out of the way for machining operations. Made by **Pines Engineering Co.**, 601 Walnut St., Aurora, Ill.

▲ For more details circle **NED-440 M9** on enclosed inquiry slip ▲

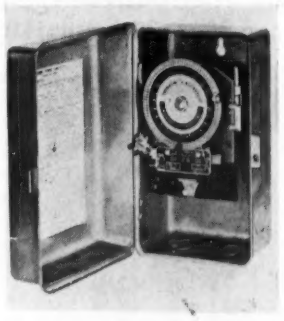
## CATWALK FLOOR GRATING
### permits extending shelf area upward



Present shelving area can be doubled in many installations in the same floor area by making use of this floor grating system. Installation of inexpensive nonskid steel catwalks and a stairway provides access to shelving which can be extended as high as the ceiling permits. Modular catwalk design permits custom fitting with interchangeable components. Photo shows double-decked shelving with total height of 14 ft and a catwalk at the 7-ft level. Made by **Aurora Equipment Co.**, Equipto Div., 422 Cleveland Ave., Aurora, Ill.

▲ For more details circle **NED-441 M9** on enclosed inquiry slip ▲

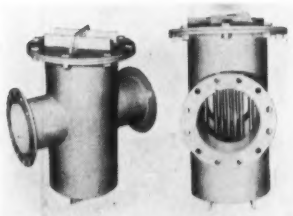
## TIME SWITCH
### momentary contact type



A 3 to 5-sec pulse for on or off single-pole double-throw switching is provided by the MC momentary contact time switch for control of mechanically held contactors and low voltage lighting systems. On-off times are set by placing trippers on the single dial. Available are a 24-hr dial for any number of on-off operations; Astronomic dial to switch on at sunset and off at sunrise or any preset hour from 10:30 p.m. to 1:30 a.m.; and optional skip-a-day dial which omits weekend or selected days. Unit also has a manual on-off switch and continues to operate on a reserve power spring in case of power failure. Made by **Tork Time Controls, Inc.**, Mt. Vernon, N. Y.

▲ For more details circle **NED-442 M9** on enclosed inquiry slip ▲

## MAGNETIC BOWL TRAPS
### seven sizes withstand 75 psi, 650° F



Installed in liquid or slurry processing lines, these permanent magnetic bowl traps arrest and retain large or small pieces of tramp iron to guard filters, pumps, and other equipment from damage. Ferrous contaminants are also removed. Seven standard trap sizes from 8 to 18 in. withstand 75 psi and 650° F. They are normally installed upright in a horizontal pipe line, with the flow of material passing through and around the stainless teel tubes. Heavy nonmagnetic bodies fall into a sump for removal through a plug. Tramp iron is removed by lifting out the magnetic element and wiping the tubes downward to a small dead area at the base. Made by **Eriez Mfg. Co.**, 420 Commerce Bldg., Erie 6, Pa.

▲ For more details circle **NED-443 M9** on enclosed inquiry slip ▲


**For more reliable soldering and less down time by skilled or unskilled workers**

**NEW Weller® SOLDERING IRONS**
★ with built-in MAGNASTAT temperature control

*. . . automatically maintains correct soldering temperature*

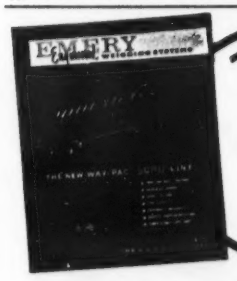
Newest soldering development! Controlled temperature iron never overheats. Minimizes tip redressing. Reaches full heat quickly. Operator benefits include . . . only half the weight of uncontrolled irons; handle stays cool. Sensing device is in the Magnastat Wellertip. These advantages mean less down time and more reliable soldering for all production line employees.

*4 models cover all electrical soldering requirements. All models have 3-wire plug. Send for folder.*

**WELLER ELECTRIC CORP.** 601 Stone's Crossing Rd. Easton, Pa.

▲ For more details circle **NED-444 M9** on enclosed inquiry slip ▲

▲ For more details circle **NED-445 M9** on enclosed inquiry slip ▲



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NEW WEIGHING SYSTEM CATALOG

**Contains Engineering Details Covering New Way-Pac® 5000 Pound Capacity Load Cells**

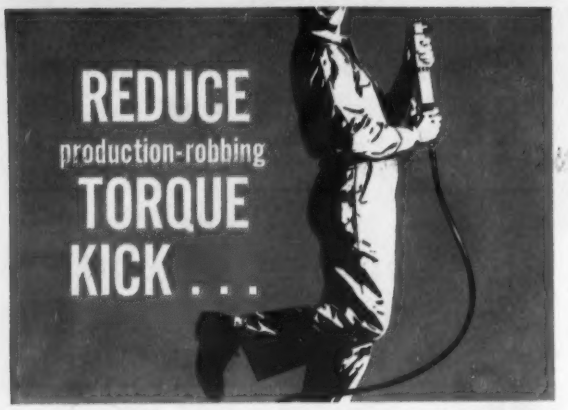
- Describes Exclusive "Rolling Ball Head"
- Explains Catenary Action of Diaphragm
- Five Different Cells in Cross Section
- Contains Details of New Totalizer
- Component Price List Part of Catalog

Write for this new Bulletin 591 today to

The A. H. Emery Co.,
Pine Street, New Canaan, Conn.
Please send me a copy of Bulletin 591 ☐
Please have your representative call ☐
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

EMERY *Engineered* WEIGHING SYSTEMS

▲ For more details circle **NED-446 M9** on enclosed inquiry slip ▲




. . . with a Cleco automatic shutoff 14 series right angle nutsetter

Cleco's 14 ARA contains a dependable shutoff mechanism which stops the air motor instantly when preset torque is attained. Preset torque is accurately maintained to required specifications. Torque reaction is greatly reduced, thereby decreasing hazardous, tiring tool kick. This economical, high-production nutsetter has a friction-free clutch that permits extremely long periods of operation with negligible wear.

Exceptionally rugged, the 14 ARA weighs just over five pounds, and is available in reversible or non-reversible models.

For Complete Descriptive Details Write For Bulletin NS-558.

DIVISION OF REED ROLLER BIT COMPANY
P. O. Box 2119 • Houston 1, Texas

CLECO AIR TOOLS

IN CANADA: Cleco Pneumatic Tool Company of Canada, Ltd., 927 Millwood Road, Leaside (Toronto), Ontario.

▲ For more details circle NED-447 M9 on enclosed inquiry slip ▲



MARSHALLTOWN

ROTARY THROATLESS SHEARS

CAPACITIES
18 GAUGE TO ½"
CUTS ANY SIZE . . .
ANY SHAPE

America's finest for every cutting job — straight, irregular or circular patterns.

Speedy—up to 6 ft. per minute. Efficient, easy to operate.

Built for extra heavy duty use. High grade tool steel cutters.

Write Today for Details and Prices

MARSHALLTOWN MFG. COMPANY
MARSHALLTOWN 2, IOWA

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helps prevent colds

Production line and office workers can now work in absolute comfort

The new low-priced ELECTRO MAT throws off a gentle warmth that keeps workers healthy, happy and comfortable. 14" x 21" portable foot warmer is safe and economical . . . consuming less power than a 100 Watt light bulb. It is made of high quality oil-resistant rubber.

Attention Employers

Increase the efficiency of your employees and help prevent colds which cause absenteeism. Equip each employee with an Electro Mat.

IMPORTANT SAVING: If 6 or more Electro Mats ordered price is only $6.95 each.
Please send me: ☐ Electro Mat at $7.95 each.
Enclosed is my check ☐ money order ☐
☐ C.O.D. I am enclosing $1.00. Will pay postman balance of $6.95 plus C.O.D. fee.

Name _____
Street _____ Zone ____
City _____ State _____

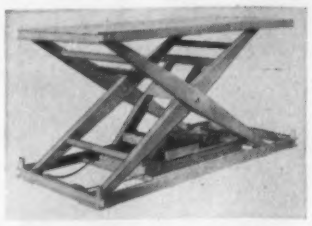
Mail check or money order today
Only $7.95 Delivered

10 Day Money Back Guarantee
Interstate Rubber Products Corp., Dept. 303
906 Avila St., Los Angeles 12, California
9108 Meyers Rd., Detroit 28, Michigan

Dealer Inquiries Invited.

▲ For more details circle NED-449 M9 on enclosed inquiry slip ▲


## SCISSOR TYPE TABLES
### have platforms up to 16 ft long



Long loads are efficiently lifted, fed, and positioned by the self-contained LP Series scissor type hydraulic tables. Suited for machine, process, or assembly operations, they have capacities from 1000 to 6000 lb. Platforms range from 38 to 65 in. wide and from 7 to 16 ft long. Minimum collapsed heights are from 9½ to 12 in., depending upon model. Vertical platform travel is up to 40 in., with up to 60 in. optional. Shown is 3000-lb capacity unit with 46 x 100-in. platform. Made by **Southworth Machine Co.**, 30 Warren Ave., Portland 2, Maine.

▲ For more details circle NED-450 M9 on enclosed inquiry slip ▲

## POWERED WHEEL DRIVE
### for Verti-Lift portable elevators

Conversion of battery powered, 1500-lb capacity Hy-Boy Verti - Lift portable elevators to walkie type lift trucks is possible by installation of this powered wheel drive unit. Its hydraulic fluid drive provides smooth starts and stops. Forward and reverse buttons are on the handle, and braking action is exerted when the steering handle is moved into an upright position. Release of the handle automatically moves it into braking position. The drive wheel is spring-suspended for good contact with the floor at all times. Two batteries power horizontal propulsion and vertical load lifting. Both are recharged by plugging the built-in recharger into a 110-v ac line overnight. Made by **West Bend Equipment Corp.**, Water Street, West Bend, Wis.

▲ For more details circle NED-451 M9 on enclosed inquiry slip ▲

## DIE HANDLING TABLE
### 30 x 30-in. unit raises 2000 lb

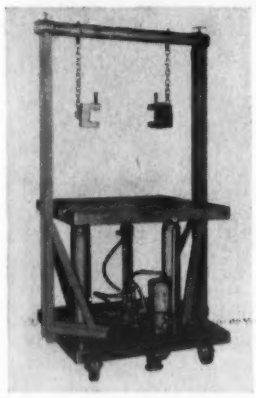
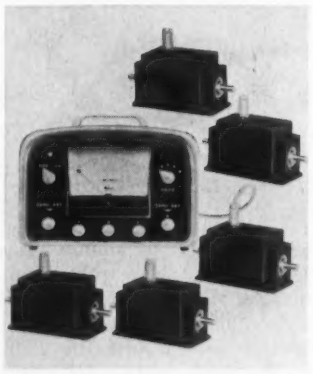


Table size of 30 x 30 in. and capacity of 2000 lb are featured by hydraulic table-type Push-Pull die handler mounted on 5-in. casters for mobility. Unit can handle up to 20-in. wide dies between adjustable clamps. With table in top position, clearance to bottom of bar is 14 in. Table raises from 30 in. to 48 in. The two-way design facilitates assembly and separation of dies. Handler is equipped with a floor lock. Made by **Lexco Engineering & Mfg. Corp.**, 20 W. Chestnut St., Souderton, Pa.

▲ For more details circle NED-452 M9 on enclosed inquiry slip ▲

## TORQUE METER
### handles up to five pickup heads



Up to five pickup heads can be used with this torque meter for measuring the torque of rotating shafts. Readings are independent of shaft speeds between 50 and 24,000 rpm, and of direction of rotation. Torque ranges cover 0.1 to 500 oz-in. Each pickup head is calibrated by one knob. Torque meters can be used with most recorders, and special pickups can be installed so that no loads are imposed on the system measured. Made by **Metron Instrument Co.**, 432 Lincoln St., Denver 3, Colo.

▲ For more details circle NED-453 M9 on enclosed inquiry slip ▲


JUST OUT!
NEW 1959 EDITION

free 84-PAGE CATALOG

One Complete Source of Detailed Specifications for Designers, Production Managers, Toolroom Foremen

Hundreds of NEW ITEMS

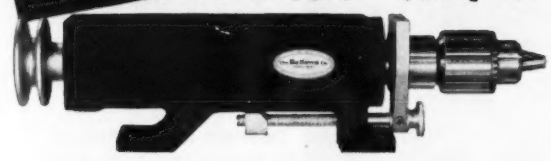
ALL NEW — Complete specifications and cost saving data on over 2000 "Standards", including world's largest line of work-holding equipment, chuck jaw blanks, handles, knobs, wheels, strap clamp assemblies, forged items, plus hundreds of other jig and fixture components. Detailed specifications, engineering drawings. The one complete source for data on all the "standards" for tool, die, jig, and fixture design and application. Write for your FREE copy today.

JERGENS TOOL SPECIALTY CO.
Dept. NE-12, 712 E. 163rd. St., Cleveland 10, Ohio

▲ For more details circle NED-454 M9 on enclosed inquiry slip ▲



LOW COST DRILL HEAD



VERSATILE: Drill capacity: No. 80 to 3/16" drill in mild steel. Air-powered traverse. 2" stroke. Optional hydraulic feed. Pulley drive. Choice of 8,000 or 12,000 RPM spindle speeds. Sold less valve. Can be controlled by low-voltage Bellows Electroaire Valve or any conventional 4-way valve.

COMPACT: Only 2-1/2" x 3-5/8" x 12-3/16". Can be used in close quarters where other units often won't fit, eliminating additional manufacturing steps.

LOW COST: Model 22A Drill Head is priced so low that it often pays for itself in one production run. (Pulley and chuck, illustrated, not supplied as standard equipment.)

Write today for free Bulletin BL-22. Address Dept. NED 1259.

The Bellows Co.
DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)
AKRON 9, OHIO

636-C OTHER INDUSTRIAL DIVISIONS OF IBEC: Sinclair-Collins Valve Co. Valvair, Akron, Ohio • V. D. Anderson Co., Cleveland, Ohio

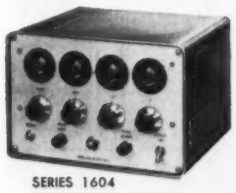
▲ For more details circle NED-455 M9 on enclosed inquiry slip ▲



AUTOMATIC PRODUCTION CONTROL with PRESET ELECTRONIC COUNTERS

SERIES 1601

Now, simplified *count*rol of batching, length, flow, materials handling, packaging and similar operations. Easy to use — just set the dial to preset quantity and counter takes over. Electronic counters are fast, accurate — go up to 5000 cps., also — automatic sequential predetermining. Actuated by photohead, switches, contactors, sending units; or available with tailored photohead.



SERIES 1604

Send for new Preset Counter Bulletin . . . Complete information on the complete Veeder-Root Predetermining Counter line.

Veeder-Root
HARTFORD 2, CONNECTICUT
"The Name that Counts"

New York • Chicago • Los Angeles • San Francisco • Seattle
St. Louis • Greenville, S. C. • Altoona, Pa. • Montreal
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VR9-01

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TEFLON is a duPont trademark

# FLEXIBLE TEFLON® HOSE TO 2" I.D. WITH METAL BRAID BENDS TO 6¾" r. AT −65° F.!

Manufactured by an exclusive Titeflex process. This metal braid exterior with the convoluted inner Teflon core, reinforced with Fiberglas® tape, has tremendous strength coupled with finger-flexibility.

RETAINS ALL TEFLON'S REMARKABLE FEATURES: toughness, chemical inertness; light weight; corrosion resistance, temperature resistance from −65° to 400° F. TITEFLEX ADDS: Exclusive "zero motion" stainless steel braiding which minimizes chafing; positive attachment fittings of stainless steel; complete qualification testing; lengths to 25 ft.; diameters of ¾", 1", 1¼", 1½", 2", and soon, to 4". WRITE FOR BULLETIN 400.

titeflex

titeflex, inc., hendee st., springfield, mass.

▲ For more details circle NED-457 M9 on enclosed inquiry slip ▲

WAGNER Integral-Type Gearmotors

FOR THE POWER YOU WANT... AT THE SPEED YOU NEED

You can get positive speed reduction with plenty of power by using Wagner Gearmotors. They provide compact motorized drives, with both motor and gear housing of corrosion-resistant cast iron. Available with the latest NEMA Frame open protected or totally enclosed fan-cooled motors, they combine Wagner motor dependability with rugged, simplified gear units to give you speed reduction equipment designed for greater capacity and longer life in ordinary up to rough service. Write for Bulletin MU-227.

Wagner Electric Corporation SERVING INDUSTRY SINCE 1891

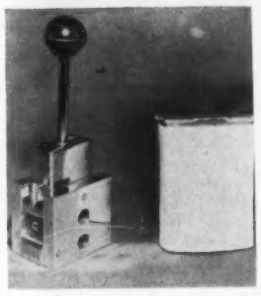
6435 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

WM59-12A

MOTORS • BEARINGS • STANDARD ROTORS
BRUSHES • CAPACITORS • COMMUTATORS

▲ For more details circle NED-458 M9 on enclosed inquiry slip ▲

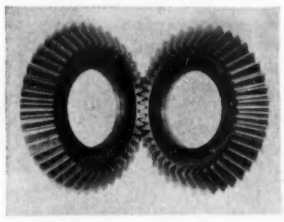
## FULL-FLOW VALVE
### for air, hydraulic, or vacuum use



Basic full-flow industrial valve has a diecast aluminum body and measures 2.060 x 2.850 x 0.750 in. with its cover. Presently made in a ⅛-in. size for ⅛ or ¼-in. fittings, the valve can be used interchangeably in pneumatic, hydraulic, and vacuum service. Available ratings are vacuum to 20 psi, 0 to 300 psi, 500 to 1000 psi, and 1000 to 1500 psi. Standard handle is 3 in. long, but other lengths can be specified. Valve has machine tool, automotive, aircraft, appliance, and marine industry applications. Made by **Gabriel Co.**, 1148 Euclid Ave., Cleveland 15, Ohio.

▲ For more details circle NED-460 M9 on enclosed inquiry slip ▲

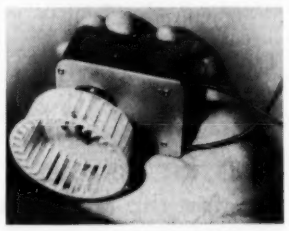
## BEVEL GEARS
### feature straight bevel tooth design



Minimum of two teeth is in contact at all times as a result of straight bevel tooth design embodied in FMS spheroid bevel gears. Series A for use in all ordinary industrial applications is machined after heat treatment. Series AA, with 50 per cent higher load capacity, is case hardened and has silver plated teeth for lubrication during break-in period. Standard ratios of 1:1, 2:1, 3:1, 3:2, and 4:3 are available with pitch diameters ranging from 1 to 13½ in. Made by **Braun Gear Co.**, 239 Richmond St., Brooklyn 8, N. Y.

▲ For more details circle NED-461 M9 on enclosed inquiry slip ▲

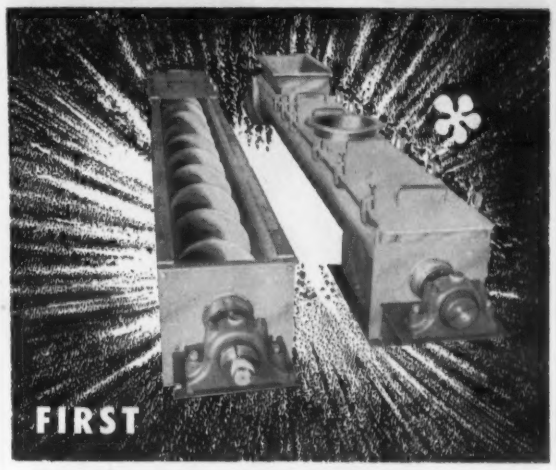
## FRACTIONAL HP MOTOR
### runs years without attention



Lubricating oil sealed inside the turning rotor of the S/L-1085 fhp-motor enables it to run continuously for 5 years or more without oiling. The low cost, 110 or 220-v, 50/60-cycle motor has 1/750 to 1/185-hp rating. Its unit-bearing rotor turns on a stationary shaft at 3400 rpm without load, or 2600 to 3200 rpm with recommended loads. Operating temperature range is −10 to 250° F. Motor is available as a skeleton or in a trim housing with mounting plates. It can be fitted with 2 to 3-in. diameter circulating blowers, 4 to 6-in. plastic fans, or gearboxes. Price is $2.25 to $3.25 in volume, depending upon type. Made by **Howard Industries, Inc.**, 1760 State St., Racine, Wis.

▲ For more details circle NED-462 M9 on enclosed inquiry slip ▲

See your CONTINENTAL Distributor




FOR *Screw Conveyors*

Continental's wide experience in manufacturing special and standard screw conveyors and screw elevators is available to assist in your planning.

Custom Made Stainless Steel Screw Conveyor.

CGC
INDUSTRIAL DIVISION
Continental Gin Company
BIRMINGHAM, ALABAMA
ATLANTA • DALLAS • KNOXVILLE • MEMPHIS • MOBILE • NEW YORK 17

▲ For more details circle NED-463 M9 on enclosed inquiry slip ▲

a new and improved RETAINING RING

# ECON-O-KIT

**400 Truarc Cadmium Plated Rings —84 Sizes—70% of Ring Sizes Used in Industry**

Save — eliminate many purchase orders for small quantities of retaining rings — Get most sizes used on your equipment with only ONE order — in one shockproof, plastic case. Sizes from ¼ to 2½ inches in the three most used Truarc series of internal, external and universal crescent ring designs. All rings meet National Aircraft Standards NAS 669 and NAS 670. Low priced at $34.50 per kit. Use the coupon below TODAY!

*Installation and removal tools also available.*

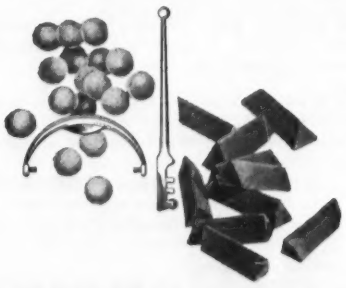
**Packaged Merchandise Co.**
3067 W. 117th St. • Cleveland 11, Ohio

Packaged Merchandise Co., 3067 W. 117 St., Cleveland 11, O.
Gentlemen:
Please ship immediately _____ Retaining Ring Kits at $34.50 each.
Company _____
Address _____
Signed _____ Title _____

▲ For more details circle NED-464 M9 on enclosed inquiry slip ▲

*Barrel Finishing is Best*

*... with TUMBLEX* bonded abrasives*



Combining the right barrel finishing techniques with best abrasives is your surest way to cut finishing costs.

Among the wide variety of Norton TUMBLEX abrasives, the bonded types are "T" triangles, "S" spheres, "TP" triangular pins and "RP" round pins. Made of bonded ALUNDUM* abrasive, and in many sizes, they provide best results and greatest economy on many finishing jobs.

Send samples of parts you finish to our Sample Processing Department. We'll barrel finish, return samples, and report the methods and abrasives you need to improve quality and cut costs. NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors around the world.

*Trade-Mark Reg. U.S. Pat. Off. and Foreign Countries

G-382

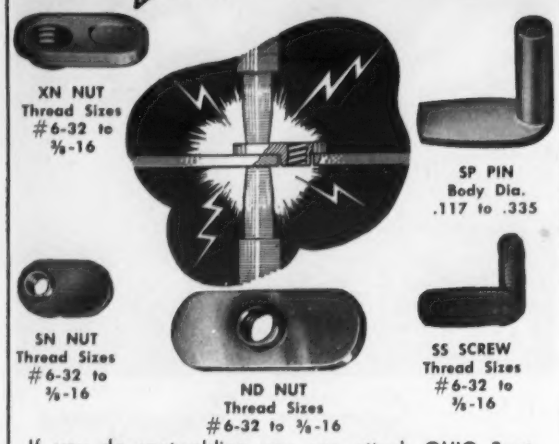
NORTON ABRASIVES

Making better products . . . to make your products better

NORTON PRODUCTS: Abrasives • Grinding Wheels • Machine Tools • Refractories • Electro-Chemicals — BEHR-MANNING DIVISION: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

▲ For more details circle NED-459 M9 on enclosed inquiry slip ▲

OHIO SPOT WELDING FASTENERS




If you do spotwelding you can attach OHIO Spotweld Fasteners at the same time for faster, trouble-free assembly.

Samples and information available upon request.

The Primary Fastener in Fastener Assemblies

THE OHIO NUT AND BOLT CO.
14 FIRST STREET BEREA, OHIO

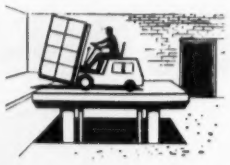
▲ For more details circle NED-465 M9 on enclosed inquiry slip ▲



**Lift it the low-cost way**

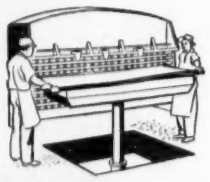
WITH DEPENDABLE HYDRAULIC POWER

Load trucks from floor level . . . no dock needed



Move traffic from one floor level to another

Rotary Levelator Lifts, using dependable, economical oil-hydraulic power, have countless applications in modern industry. Capacities to 100,000 lbs. Standard models and special lifts engineered to your specifications. Write for catalog.



Feed machines, perform other industrial lifting jobs

Rotary® Levelator® Lifts
ROTARY LIFT COMPANY
*Division of the Dover Corporation*
1068 Kentucky, Memphis 2, Tenn. • Chatham, Ont.

▲ For more details circle NED-466 M9 on enclosed inquiry slip ▲

Four stock sizes fit hook shanks ranging from ⅝ through 1¼ in. Latches for larger shanks available.

**New Peerless SAFETY LATCH converts standard hooks to safety hooks in minutes**

Make all hooks on your hoisting equipment safety hooks . . . convert them in minutes with simple tools and a Peerless Safety Latch. Made of sturdy corrosion-resistant materials and designed for long life.

The latch installed costs less than machining a conventional safety hook, can be applied to any make of hook on any type of hoist or sling, has finger lugs to protect hoist operator.

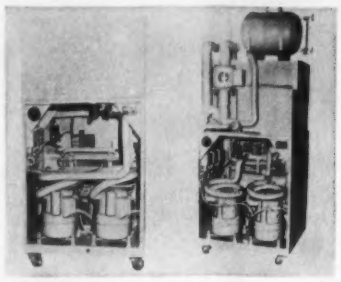
*Write us for full particulars*

**THE HARRINGTON COMPANY**
Plymouth Meeting 16, Pa.

Hand Chain Hoists (¼ to 60 tons) • Electric Hoists (170 to 4000 lb.)
Trolley Hoists (¼ to 12 tons) • I-Beam Trolleys (¼ to 20 tons)

▲ For more details circle NED-467 M9 on enclosed inquiry slip ▲

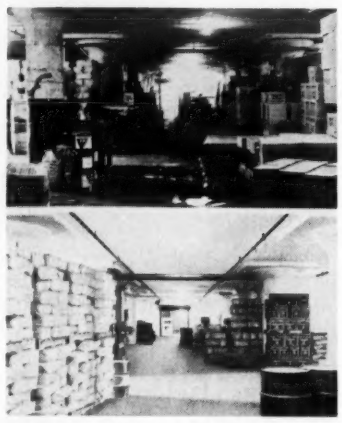

## PACKAGED REFRIGERATION UNITS for industrial testing and cooling



Temperatures as low as −120° F are provided by Kold-Pak portable, packaged refrigeration units. These mechanical assemblies deliver low temperature mediums to any enclosure through heat exchangers that can be connected to flow lines. Direct expansion Freon types (left) and brine chiller types (right) are available in 12 models with cooling capacities to 34,000 Btu/hr. Equipment is suited for such services as testing and production. Made by **Tenney Engineering, Inc.**, 1090 Springfield Rd., Union, N. J.

▲ For more details circle NED-468 M9 on enclosed inquiry slip ▲

## INTERIOR SPRAY PAINT dries almost instantly



Dri-Spray White, a fast - drying interior spray paint, is safe to use overhead or near work areas without drop cloths or messy clean-up after painting. Overspray dries in the air and is easily swept or brushed away. Usable on interior wood, metal, concrete, and plaster surfaces, paint dries so quickly that the painter can put a new coat over a coat that has dried an instant before. The desired mil thickness can thus be built up without moving ladders or scaffolding. Picture shows before and after views in a storage area. Developed by **Tropical Paint Co.**, 1246 W. 70th St., Cleveland 2, Ohio.

▲ For more details circle NED-469 M9 on enclosed inquiry slip ▲

## ELECTRIC BRAKE for fhp-motors up to ¾ hp

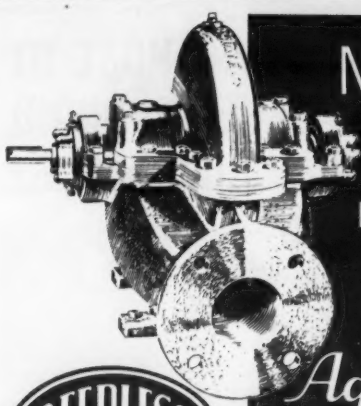
Low cost Selenibrake-Jr. electric brake for single and three-phase alternating - current motors up to ¾ hp is placed between line and motor. A single heavy - duty switch on the panel serves as start, coast, and instant braking control. The compact, fail-safe unit measures 8 x 8 x 10 in., requires no wiring, and has no moving parts. Applications include plant and shop power tools, small lathes, power saws, conveying and filling motors, fhp lab equipment, and centrifuges. Made by **American Rectifier Corp.**, Selenibrake Div., 95 Lafayette St., New York 13, N. Y.

▲ For more details circle NED-470 M9 on enclosed inquiry slip ▲

## WIRE CUP BRUSH has improved turret back

A turret back in the improved UDX-6 wire cup brush absorbs operating stresses, making possible speeds up to 7000 rpm. A rolled bead edge minimizes breakage of outside wires under severe usage. A third feature is the internally mounted nut which becomes tighter in operation and brings brush closer to the power tool for better balance. Design permits two full rows of tufts, with more wires per tuft, for faster cutting and longer life. Brushes will clean and rough-finish large metal surface areas with hard encrustations, as well as finish concrete and stone. Made by **Anderson Corp.**, 1029-1039 Southbridge St., Worcester 10, Mass.

▲ For more details circle NED-471 M9 on enclosed inquiry slip ▲

NOW . . . A LOW COST, HI-QUALITY, HORIZONTAL SPLIT CASE PUMP

PEERLESS PUMPS

*Aqua Line* PUMPS

IDEAL FOR HANDLING, BOOSTING, CIRCULATING HOT OR COLD WATER

The modern design of the Aqua Line means real pump value. You get traditional Peerless high-quality yet the Aqua Line is priced to compete. You get immediate availability, easy installation, low maintenance, and nation-wide service after the sale. Get the full story on this low cost high-quality pump. Write for literature today.

SIZES TO 8" • CAPACITIES TO 2600 GPM
HEADS TO 280 FT. • TEMPS TO 250°F.

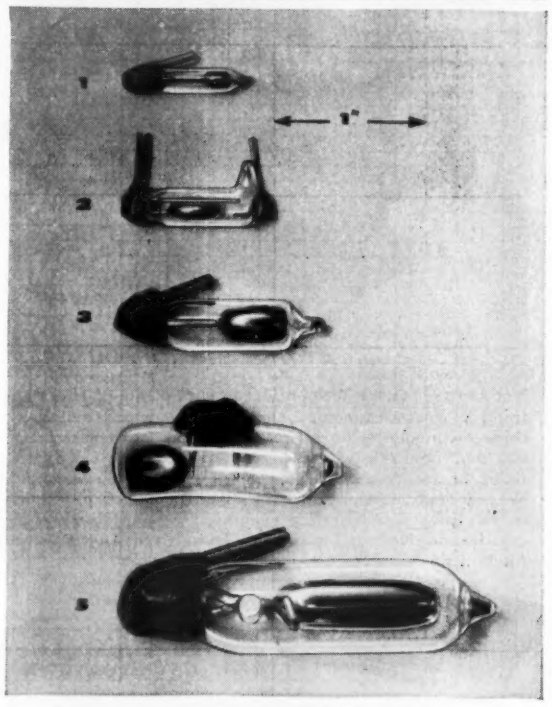
Send for Bulletin B-2100

fmc FOOD MACHINERY AND CHEMICAL CORPORATION
*Putting Ideas to Work*
Peerless Pump Division
Plants: Los Angeles 31, Calif. and Indianapolis 8, Ind.

▲ For more details circle NED-472 M9 on enclosed inquiry slip ▲



MICRO SWITCH Precision Switches



**5 MERCURY SWITCHES that meet a variety of requirements**

**1** New Miniature Mercury Switch AS419A1 is 0.90" long, weighs 0.9 gram (without leads)—31 switches to the ounce. Low mass shift facilitates gang mounting. Data sheet 149.

**2** New ultra-small super-sensitive mercury switch AS603A1 is the most precise available. Differential angle—.150° max. Data sheet 153.

**3** Small general purpose mercury switches, Series AS417B, offer small size with 3 amps. capacity at 115 volts ac or dc. Data sheet 114.

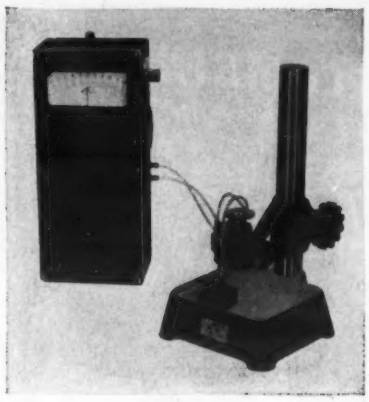
**4** Mercury pulse switch AS702B1 for direct one-to-one counting. Pulse action is accomplished by the curved glass tube. Data sheet 118.

**5** Medium size general purpose mercury switch AS454A handles loads up to 10 amps., 115 vac. Sealed contacts, low force tilt action. Catalog 90.

MICRO SWITCH . . . FREEPORT, ILL.
A division of Honeywell
*In Canada: Honeywell Controls Limited, Toronto 17, Ontario*

Honeywell
MICRO SWITCH PRECISION SWITCHES

▲ For more details circle NED-473 M9 on enclosed inquiry slip ▲



**MODEL AG5 ACCU-FLOW AIR GAUGE**

A general-purpose non-contact gauge for use as measurer or comparator on a variety of critical applications.

*A new standard of accuracy . . .*

## ACCU-FLOW* by AMES

B. C. Ames has perfected a new concept of air gauging that offers extremely fine measurement and unusual stability.

AMES ACCU-FLOW air gauges give you an accurate non-contact measuring method that is ideally suited to checking size variations on continuous production items such as wire, rubber, plastics, etc. Send for free ACCU-FLOW folder.

*Trademark of B. C. Ames Co.

*Representatives in Principal Cities*

**B.C. AMES CO.**

*34 Ames Street, Waltham 54, Mass.*

*Canadian Representative—H. C. Burton Co. Ltd., Hamilton*

MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES

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***• Centerless Ground to extreme accuracy. Special new-type Equipment, assures concentric chamfered or formed ends—no cut-off burrs.***

**Dowel—Straight—Countersunk—Angle and Spherical Ends** .020" to .1875" Diam. .125" to 2" Length

**Precise Specifications** Accurately met. If requested on order, a surface analysis tape, showing surface in micro-inch measurements, will be furnished. Tape magnifies 39,370 times.

**Small orders or volume production to your exact requirements and material specifications.**

**Quality Precision Work!**
**Prompt Deliveries!**
**Prices you will like!**
**SEND US PRINTS FOR QUOTATION**

**COMMERCIAL CENTERLESS GRINDING COMPANY**
6605 CEDAR AVE., CLEVELAND 3, OHIO
*Phone:* ENdicott 1-3412

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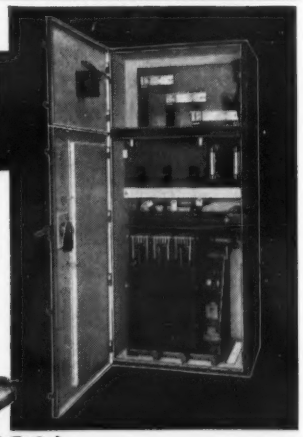
## NEW EC&M STARTER

**GIVES 100/150 MVA fault protection**

***WITHOUT X FUSES!***



- *Certified* interrupting capacity of 100,000 KVA at 2400 volts, 150,000 KVA at 4800 volts
- Bus bars used throughout—no power cable connections
- Gang-operated disconnect and three-way door interlock
- No roll-out needed—arc shields slide out horizontally
- Cast alloy lugs on motor terminals give high holding strength
- Cable supports for easy installation and clamping of motor leads

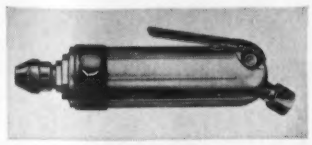
***Write** for complete story. Ask for Bulletin 8130A*

**THE ELECTRIC CONTROLLER & MFG. CO.**
A DIVISION OF THE SQUARE D COMPANY
CLEVELAND 28 • OHIO

2322

▲ For more details circle **NED-476 M9** on enclosed inquiry slip ▲

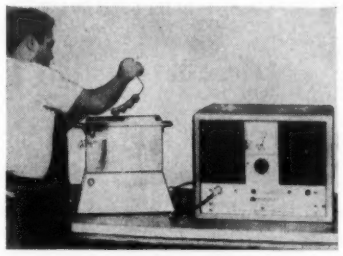
## AIR OPERATED GRINDER
### speed controlled from 0-25,000 rpm



Metering trigger on Model 1600 air die grinder delivers controllable speeds from 0 to 25,000 rpm to let operator "throttle down" for feather edging. Used for polishing, wire brushing, and material removal, grinder has 1/4 and 1/8-in. collets to take standard rotary files, carbide wheels, wire brushes, mounting points, and sanding drums. It consumes 6 cfm air at 90 psi, weighs 15 oz, and is 6 in. long. Price is $89.50. Made by **Superior Pneumatic & Mfg. Inc.**, 13800 Enterprise Ave., Cleveland 35, Ohio.

▲ For more details circle **NED-477 M9** on enclosed inquiry slip ▲

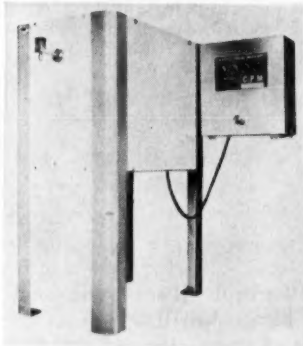
## ULTRASONIC CLEANERS
### three standard off-the-shelf units



Intricate assemblies and components are cleaned rapidly and effectively by Multipower line of three off-the-shelf ultrasonic cleaners. Transducer efficiency rating is 90 per cent. Model DR 252 generator with 3-gal T3 tank has average output power of 250 w. Model DR 520 with 5-gal T5 tank has output of 500 w. Model DR 1020 generator has power output of 1000 w and a 10-gal T10 tank. Prices are $920, $1570, and $2790, respectively. All models operate at 20 kc. Made by **Acoustica Associates, Inc.**, Fairchild Court, Plainview, L. I., N. Y.

▲ For more details circle **NED-478 M9** on enclosed inquiry slip ▲

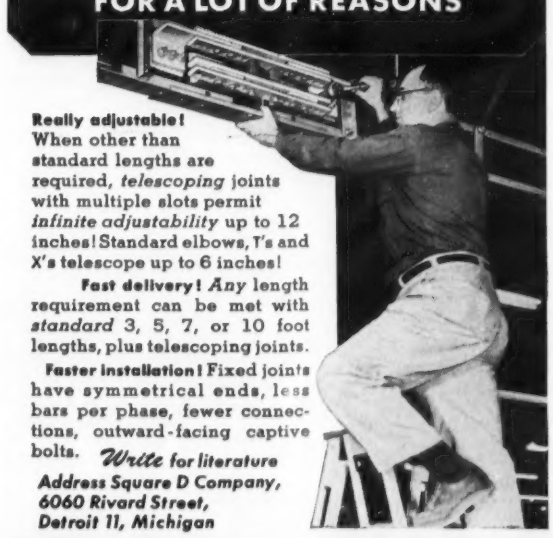
## EPOXY RESIN PROPORTIONER
### meters, mixes, and dispenses resins



Short pot-life, multicomponent reactive epoxy resins are handled with ease and a minimum of waste by the Auto-Rex-Mixer. Pushbutton operated unit proportions, meters, mixes, and dispenses two-part epoxy compounds for potting, embedment, encapsulation, impregnation, casting, and adhesive applications. The Dispensor-Valve provides sharp cut-off of highly viscous or filled resins. Heating, agitation, de-aeration, and vacuum dispensing are optional. Operation is on 115-v ac. Made by **CPM Special Machinery Corp.**, 324 Butler St., Brooklyn 17, N. Y.

▲ For more details circle **NED-479 M9** on enclosed inquiry slip ▲

## SQUARE D's *New* ADJUSTABLE ALUMINUM FEED-IN DUCT FOR A LOT OF REASONS



**Really adjustable!** When other than standard lengths are required, *telescoping* joints with multiple slots permit *infinite adjustability* up to 12 inches! Standard elbows, T's and X's telescope up to 6 inches!

**Fast delivery!** *Any* length requirement can be met with *standard* 3, 5, 7, or 10 foot lengths, plus telescoping joints.

**Faster installation!** Fixed joints have symmetrical ends, less bars per phase, fewer connections, outward-facing captive bolts.

***Write** for literature*
*Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan*

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

**SQUARE D COMPANY**

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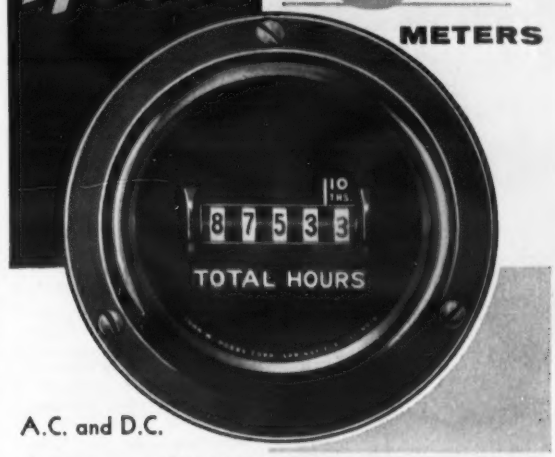
## Hobbs INDUSTRIAL HOUR METERS




A.C. and D.C.

**Indicate actual operating time—the only effective basis for machine utilization studies . . . planned maintenance . . . renting and leasing.**

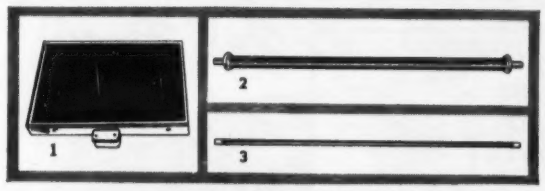
Distributors in principal cities
WRITE FOR CATALOG 600

Symbol of SW Excellence

***John W. Hobbs Corporation***
**A Division of STEWART-WARNER CORPORATION**
**2066 YALE BLVD., SPRINGFIELD, ILLINOIS**

▲ For more details circle **NED-481 M9** on enclosed inquiry slip ▲

## HEAT SOURCES




### 3 GLASS UNITS FOR YOUR PROCESS OR PRODUCT

**1. PYREX BRAND RADIANT PANEL**—Durable flat glass, coated with a material that conducts electricity, serves as area source of uniform heat. Long wave output readily absorbed by all colors. In squares and rectangles; up to 15 watts per sq. in. Complete—panel, mounting frame, reflector, hangers, junction box, leads. Ask for Bulletin PE-60.

**2. HEAT SHEATH**—Resistance wire element is enclosed in VYCOR brand glass tubing that's immune to thermal shock. Red or clear tubing, 5/8" O.D. Attractive, safe, easy to keep clean. 500 watts per linear foot. Ask for details.

**3. RADIANT TUBES**—New, very unusual. Glass rod 1/4" in diameter has fired-in coating that conducts electricity. Output is 50 watts per 6 inches of rod. Inquiries invited.

**CORNING GLASS WORKS**
56 Crystal Street, Corning, New York
CORNING MEANS RESEARCH IN GLASS

▲ For more details circle **NED-482 M9** on enclosed inquiry slip ▲

## in SAFETY and RELIABILITY with new Square D Combination Starter

**EXTRA SAFETY!**

Operating handle permanently attached to switch. Visible Blades on switch for safety you can *see*. Double protection against opening door with handle "ON."

**REAL RELIABILITY!**

NEMA 5-12 construction keeps out dust and coolant. No linkages to go wrong. Door closes snugly every time. Rugged construction throughout for extra-long life.

***Write** for details. Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin*

**SQUARE D COMPANY**
*wherever electricity is distributed and controlled*

▲ For more details circle **NED-483 M9** on enclosed inquiry slip ▲

# FREE!

If heat processing is your job— don't miss this "idea-packed" booklet

Never before have so many sound basic ideas on heat processing been available under one cover.

Written by engineering experts at Michigan Oven Company, it offers practical suggestions on what to look for in an oven regardless of your application.

Why not send for "The Handbook of Oven Facts"? It may be the most important decision you make today! Or, if you have a specific application, a MOCO representative will be pleased to call.

**MICHIGAN OVEN COMPANY**

419 Brainard, Detroit 1, Michigan

▲ For more details circle NED-484 M9 on enclosed inquiry slip ▲



# INFINITE RANGE EXTREME ACCURACY...

*Get Both*

WITH *Graham* VARIABLE SPEED DRIVES

The Graham Drive gives extreme accuracy of speed holding and reset from any desired top speed to zero. Range and accuracy are assured through the correct application of metallic traction in the first stage of a compound planetary system.

Three planet roller cones are canted in a carrier to tractionally engage an encircling control ring . . . Pinions on the large ends of the rollers mesh with a ring gear joined to the output shaft . . . Speed is changeable running or stationary . . . Planetary action provides overload protection. The dial permits settings to one part in 4000.

A wide choice of built-in motors, reducers and controls is available in sizes-fractional to 3 HP. Write for full performance data. Dept. NED.

*Ask for Graham Catalog 550.*

*Graham* TRANSMISSIONS, INC.
Menomonee Falls, Wisconsin

▲ For more details circle NED-485 M9 on enclosed inquiry slip ▲



# FREE BOOKLET may solve your hand tool problem...

It's yours for the asking: Sargent's new booklet "Industrial Application Data for Plier-Type Tools." Contains detailed case histories on cutting, shaping, crimping, punching and holding problems solved with Sargent precision hand tools. Describes and illustrates Sargent's parallel action, compound hand pliers, punches and special purpose tools many of which are designed on a custom basis. Mail coupon now for your copy.

SARGENT & COMPANY, New Haven 9, Conn. Dept. 19-M

Gentlemen: Please send me your new booklet "Industrial Application Data for Plier-Type Tools."

Name _____ Title _____

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Sargent & Company, New Haven 9, Conn. Dept. 19-M
Manufacturers of quality locks, hardware and tools since 1864.

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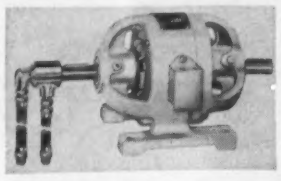
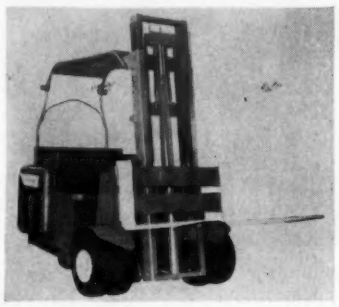
## WATER-COOLED CLUTCH can also be used for braking



Applications requiring a high degree of slippage, as in tension control and cycling, are typical for this water-cooled Magneclutch. Excessive heat generated by continued slipping within the magnetic particle clutch is dissipated rapidly by a flow of water within the inner rotating member. Either bored-motor, or hollow rotor styles are offered in eight models torque-rated from 10 to 200 lb-ft. Made by **Vickers Inc.**, Electric Products Div., 1815 Locust St., St. Louis 3, Mo.

▲ For more details circle NED-487 M9 on enclosed inquiry slip ▲

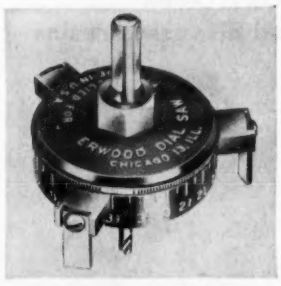
## ELECTRIC FORK TRUCK outdoor unit handles 2000-lb loads



Loads of up to 2000 lb are handled over an 8-hr shift on rough terrain by the Hustler Outdoorsman electric fork truck designed with dual pneumatic tires for indoor or outdoor service. Battery capacity is 720 amp-hr. Unit has four speeds forward and reverse with nonplugging controls. It features low seating and is easy to operate. Made by **Heifred Corp.**, 37877 Elm St., Willoughby, Ohio.

▲ For more details circle NED-488 M9 on enclosed inquiry slip ▲

## HOLE CUTTING SAW diameter range is 1⅛ to 3½ in.




Three single edge cutters adjust simultaneously to the proper hole diameter in Model 450 and 455 calibrated dial saws or holecutters. Adjustable diameter range is from 1⅛ to 3½ in. Blades for cutting through wood or metal are available; they are easily sharpened to the proper rake. Model 450 has a ⅜-in. shank and Model 455, a ½-in. shank. Both have a 3/16-in. pilot drill. Made by **Erwood, Inc.**, 1770 Berteau Ave., Chicago 13, Ill.

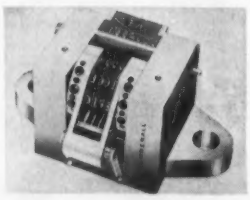
▲ For more details circle NED-489 M9 on enclosed inquiry slip ▲

## ELECTRIC VIBRATOR for tables, feeders, screens

Two eccentrically weighted armature shafts geared together to rotate in opposite directions provide the Model ET-31 dual shaft electric vibrator with a directed force vector. Its four adjustable eccentrics produce impacts from 760 to 2200 lb at 3600 vibrations per minute. Unit is totally enclosed and nonvented to exclude dirt, dust, and moisture. Heavy duty bearings require greasing once a year or every 2000 working hours. Vibrator operates on 220 or 440 v, three-phase, 60 cycles. Made by **Vibro-Plus Products, Inc.**, Stanhope, N. J.

▲ For more details circle NED-490 M9 on enclosed inquiry slip ▲

## METAL STAMPING UNIT stamps insignia above model number



Metal marking flexibility is afforded by this 3-in-1 Model 52 stamping unit which combines automatic numbering, serial or model numbering, and trade insignia marking in one stamping operation. Letter wheels can be used with number wheels. Removable type permits any series of numerals, letters, or combination to be used. Insignia or special markings are stamped above the serial number. Flanges or shank are available to fit any press. Made by **Numberall Stamp & Tool Co.**, Huguenot Park, Staten Island 12, N. Y.

▲ For more details circle NED-491 M9 on enclosed inquiry slip ▲


# COMBINATION SAWS can now be filed automatically

with the New MODEL 200

**FOLEY Automatic SAW FILER**

Also CROSSCUT CIRCULAR SAWS, BAND SAWS, HAND SAWS

This is the FIRST and ONLY machine which will file the so-called "combination" (rip and crosscut) circular saws; also crosscut circular saws, band saws, all types of hand saws.

The exclusive Foley principle of jointing the saw as it is filed, keeps teeth uniform in size, shape and spacing; keeps circular saws perfectly round, usually doubles saw life

**30-Day Trial Offer.** You may try the new Model 200 Foley Saw Filer in your own shop for 30 days. Write for literature and details of 30-day trial offer.

**FOLEY MFG. CO.** 3323 N.E. 5TH STREET MINNEAPOLIS 18, MINN.

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Here's data on the *New*

# DIAL HEAD AGASTAT®

**time / delay / relays**

These relays have recently been re-designed—improved in performance *and* appearance. So you'll want up-to-date specs.

This free folder gives complete details on all models. In it you'll find operating specs, timing ranges, contact capacities, dimensions, diagrams of contact and terminal arrangements, and data on mounting and installation accessories.

*For your copy, write:* Dept. A34-125.

AGA DIVISION ELASTIC STOP NUT CORPORATION OF AMERICA
Elizabeth, New Jersey

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# THESE MUELLER BRASS CO. ENGINEERING MANUALS help you select the best materials and best methods of fabricating a product

Mueller Brass Co. engineers have carefully selected and compiled the data contained in these technical manuals. Send for any or all of the free manuals that interest you; check appropriate box, clip out and mail with your return address.

- ☐ FORGINGS
- ☐ 600 SERIES BEARING ALLOYS
- ☐ COPPER BASE ALLOYS IN ROD FORM
- ☐ SCREW MACHINE PRODUCTS
- ☐ TUF-STUF ALUMINUM BRONZE
- ☐ COLD-PREST IMPACT EXTRUSIONS
- ☐ SINTEEL POWDER METAL PARTS
- ☐ FORMED COPPER TUBING

**MUELLER BRASS CO.** PORT HURON 37, MICHIGAN

▲ For more details circle NED-494 M9 on enclosed inquiry slip ▲

**draft-free comfort uniform temperatures**

## air make-up units

Temper and filter outside air entering work areas for better production; more efficient heating. Eliminate infiltration of cold air – equalize pressures. Supplied for natural, mixed, manufactured and propane gases. Sizes 36" to 54". Capacities 15,000 to 45,000 cfm with ratings to 4,500,000 btu. Other types for steam and hot water.

Write for Bulletins 850 and 870

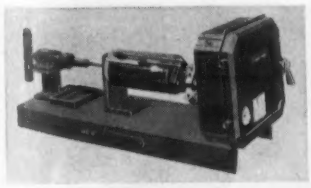
CERTIFIED PERFORMANCE

**Aerovent FAN CO INC.**
Ash and Blake Sts. Piqua, Ohio

▲ For more details circle NED-495 M9 on enclosed inquiry slip ▲



## METERING PUMP
### in 0.12 to 82.5-gph capacities



Simple metering, flow ratio control, process variable control, and multiple proportioning are among uses for the pneumatically controlled and powered Servo-Gauge metering pump. Units with capacities from 0.12 to 82.5 gph are available with discharge pressure ranges up to 5000 psi. Controlled discharge is linearly proportional to 3 to 15-psi signal. Cylinder piston and pump plunger repeatedly position to within 0.002 in. Pump operates on clean air or noncorrosive gas at 80 psi. Made by **Associated Control Equipment, Inc.**, Box 136, Coraopolis, Pa.

▲ For more details circle NED-498 M9 on enclosed inquiry slip ▲



## AIR COMPRESSORS
### that use less electric current

DeVilbiss Compressors —with greater finned cooling area—deliver low-temperature, less-expanded air to the tank. Result: less air shrinkage in the tank, less frequent running cycles, longer service with lower power consumption.

The hotter a compressor delivers air to the tank, the greater the shrinkage when it cools. This means more running cycles are necessary for a given air demand.

Send for catalog C-51, or call the local DeVilbiss man for facts on DeVilbiss Compressors—¼ to 25 hp.

DEVILBISS

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

▲ For more details circle NED-501 M9 on enclosed inquiry slip ▲



## PROXIMITY LIMIT SWITCH
### sealed unit magnetically actuated

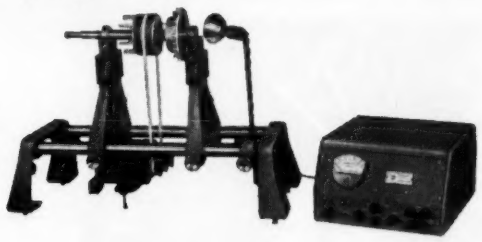
Self-contained in 10-cu in. hermetically-sealed brass housing, the GEMCO proximity limit switch is unaffected by anything other than a strong external magnetic field. Generally it can be used close to or on resistance welders, and will not false-trip. Unit requires no power input and is actuated when a foreign ferrous part is brought within its sensing area, normally ⅜ in. It remains actuated until part is removed from area. Switch operates in 50 to 250° F range. Made by **General Equipment & Mfg. Co.**, Dept. TP, 116 S. Campbell, Louisville 2, Ky.

▲ For more details circle NED-499 M9 on enclosed inquiry slip ▲



# NEW
## MU-6 Dynamic Balancer
***With Seismic Pick-ups That Reject Floor Vibrations***

Dynamically balances all high speed rotors from 4-ounces to 100 pounds! The MU-6 is simple, sensitive, rugged, versatile . . . *meets every requirement for rapid, low-cost balancing by manufacturers and service organizations.*



**MU-6 Dynamic Balancer with rotor in balancing position. The machine and all associated equipment is designed and engineered to the highest standards of ruggedness and reliability.**

Brochure MU-6 Details Specifications and Twenty Important Features. *Write for your copy.*

**MICRO BALANCING, INC.**
Herricks Road • Garden City Park, Long Island, New York

West Coast Representatives: Electronic Balancing Co., Long Beach, California

▲ For more details circle NED-496 M9 on enclosed inquiry slip ▲



## DUSTLESS DRILLING SYSTEM
### uses dust collector with rock drill

Dust and cuttings from rock or cement drilling operations are trapped by a collar that fits around the drill and drawn through a connecting hose to a Le Roi DK280 dust collecting tank. Effectiveness is shown in the photo of two drills in operation, with the one at the left equipped with the dust collector. Tank can be mounted on any compressor-carrying truck, portable compressor, or the Tractair tractor-compressor. Removable drawer holds dust and cuttings for disposal. Made by **Westinghouse Air Brake Co.**, Le Roi Div., Milwaukee 1, Wis.

▲ For more details circle NED-500 M9 on enclosed inquiry slip ▲



# NEW...
## Today's "Tightest" Toughest Ball Valve!

Rockwood Type 316 Double Seated Stainless Steel Ball Valve

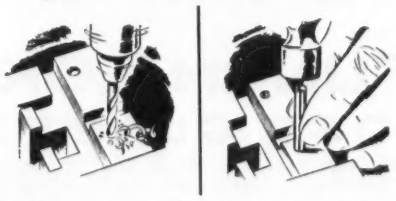
You get *positive* shut-off as well as maximum corrosion resistance with this new 316 stainless steel Rockwood Ball Valve. Exclusive spring rings back up its twin Teflon* seats . . . automatically compensate for pressure variations, wear, cold flow, and temperature effects. With flow in either direction, at any pressure, seats always hug the ball. Only ball valve with integrally cast flanges or screw ends, too. They *stay* leakproof. For use from −65°F to +350°F. Easily modified for cryogenics. Holds tight under vacuum. Handles air, alcohols, fuel and inert gases, water glass and many other fluids. Sizes ⅜" thru 2". 4 Models. Write for details. *DuPont Reg. T. M.

**ROCKWOOD SPRINKLER COMPANY**
A Division of The Gamewell Company
886 Harlow Street, Worcester 5, Mass.

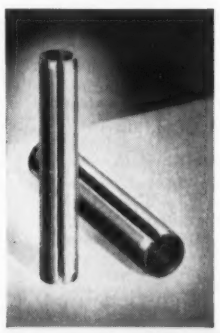
▲ For more details circle NED-502 M9 on enclosed inquiry slip ▲



## Easier way to fasten your assemblies



Just drill and drive SEL-LOK spring pins



Drill an ordinary tolerance hole. Drive in a SEL-LOK. Spring action locks it tightly in place. Use SEL-LOK spring pins as keys, axles, cotter pins, hinge pins, stop pins or pivots . . . in metal assemblies or in products of nylon, Bakelite, hard rubber or fiber. They eliminate costly tapping, reaming, peening and milling operations, as well as the rejects associated with close tolerances. They simplify design, save assembly time. And they are reusable. Stocked in carbon and corrosion-resistant steel and in beryllium copper. See your authorized SPS distributor or write us for Bulletin 2331 and samples.

**INDUSTRIAL FASTENER Division sps**
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-497 M9 on enclosed inquiry slip ▲

Improved medical techniques have cut the TB death rate. Needed: A way to prevent active tuberculosis in the 40 million Americans infected.

Anti-TB drugs save many lives, but don't work for all. Needed: Studies to improve drugs' usefulness, to develop new drugs.

Help solve vital TB problems. Your Christmas Seal contribution can help research find new weapons against TB. Answer your Christmas Seal letter today, please.

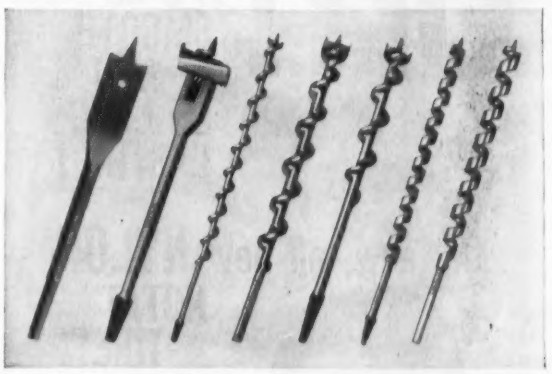
**Fight TB with Christmas Seals**

This space contributed to the National Tuberculosis Association and its affiliates by

***NEW EQUIPMENT DIGEST***



# FASTER BORING
## high-quality Greenlee tools



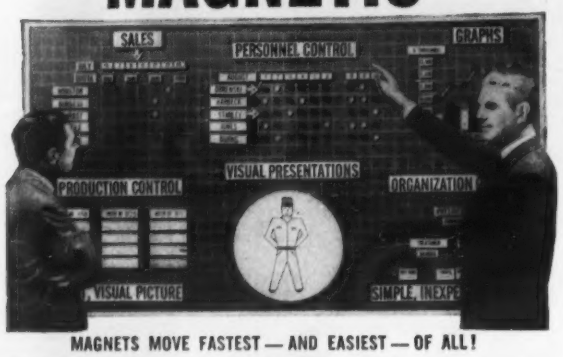
Jobs go smoother, faster when you standardize on precision-made GREENLEE boring tools. Power drill and hand brace types . . . various styles and lengths for all electrical and plant maintenance work: Solid-Center Auger Bits, Expansive Bits, Electricians' Bits, Ship Augers, Extensions. Power Bits feature new GREENLEE hex shank for positive, nonslip drive. See your distributor or write for literature.

*OTHER GREENLEE TIMESAVING TOOLS: CONDUIT AND PIPE BENDERS, KNOCKOUT PUNCHES AND DRIVERS, PIPE PUSHERS.*

**GREENLEE TOOL CO.** GREENLEE
1771 Columbia Ave., Rockford, Illinois

▲ For more details circle NED-503 M9 on enclosed inquiry slip ▲

VISUAL **MAGNETIC** CONTROL




MAGNETS MOVE FASTEST — AND EASIEST — OF ALL!

SIMPLEST VISUAL SYSTEM FOR
- Production
- Personnel
- Sales
- Maintenance
- Scheduling
- Machine Loading
- Charts—Graphs
- Visual Presentations

COLORFUL MAGNETIC ELEMENTS
- show facts instantly
- organize for action
- eliminate mistakes
- get the job done

PRICED FROM $38 INCLUDING MAGNETIC ELEMENTS

PRICE LIST & BROCHURE NE12 FREE ON REQUEST

REPRESENTATION DESIRED IN SOME AREAS

**Methods Research Corp.**
105 Willow Ave., Staten Island 5, New York

▲ For more details circle NED-504 M9 on enclosed inquiry slip ▲



*New*...from MARSH!

Conduit-type Mastermite. Grommet-type also available.

**Small solenoid valves that fill a BIG order**

Designed to meet the need for positive-acting tight-seating valves for use on wide variety of media, including oxygen, hydrogen, acetylene, etc.

**Two Types:**
Conduit type and grommet type. Port sizes 1/8" and 1/4" NPT.

**Ten orifice sizes:**
3/64" through 1/4".

**Wide range of voltages:**
Standard with 115 V. A. C. but also available in 12, 24, 208, 230, 460 V. A.C.

**Pressure to 540 psi.**

Small, but with more strength in the Marsh manner. Coils never overheat. Entire assembly leak tight. Remarkably quiet operation. Cleanable without breaking connections. Used in any position. Bodies either brass bar stock or 18-8 stainless steel. All moving parts stainless. Underwriters' approved for use on oxygen and hydrogen and as safety valves.

*Write for new bulletin*

**MARSH INSTRUMENT COMPANY**
Dept. 26, Skokie, Illinois
*Division of Colorado Oil and Gas Corporation*
Marsh Instrument & Valve Co., (Canada) Ltd., 8407 103rd St., Edmonton, Alberta, Canada, Houston Branch Plant, 1121 Rothwell St., Sect. 15, Houston, Texas.

▲ For more details circle NED-505 M9 on enclosed inquiry slip ▲



**oh!** IT'S SO SMOOTH AND SO LONG LASTING!

the new, all new **NYLON NOTAT TIRE!**

For a s-m-o-o-t-h ride, specify this improved NOTAT premium tire; softer rubber with Nylon assures easier riding, easier steering, no downtime, more traction and NO FLATS WITH NOTAT.

NO TUBE AIR TROUBLE

PATENT NO. 2901020

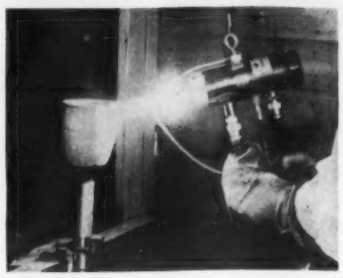
**NOTAT TIRE COMPANY**

"WRITE TODAY FOR THIS OUTSTANDING INDUSTRIAL PNEUMATIC TIRE REPLACEMENT"

1504 East 34th St. Chattanooga, Tennessee

▲ For more details circle NED-506 M9 on enclosed inquiry slip ▲

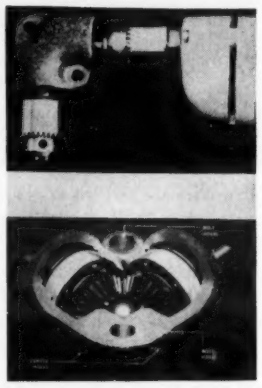

## PLASMA ARC SPRAY GUN applies high melting point coatings



Any material that will melt without decomposing can be applied by the Metco plasma flame spray gun which develops normal work temperatures of 10,000 to 15,000° F. The pushbutton-operated gun applies controlled density coatings of zirconium carbide (3540° F), tungsten (3370° F), tungsten carbide (2850° F), zirconium boride (3000° F), zirconium oxide (2700° F), and niobium carbide (3900° F), plus other oxides, borides, and carbides. It operates on inexpensive gases such as nitrogen and hydrogen. Made by **Metallizing Engineering Co.**, 1101 Prospect Ave., Westbury, L. I., N. Y.

▲ For more details circle NED-507 M9 on enclosed inquiry slip ▲

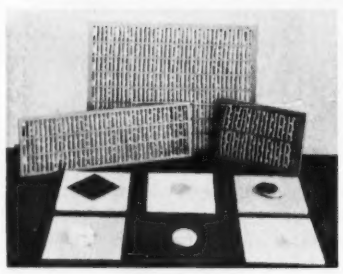
## ANGLE TOOL DRIVE for air or electric drills



Usable wherever power must be transmitted at a right angle, this ABL Angle Drive has ball bearings, hardened gears, and heavy duty construction. It withstands continuous use without overheating. This 1-to-1 ratio drive will transmit up to 1⅓ hp at 3000 rpm and ⅓ hp at 750 rpm. Maximum speed is 6000 rpm. It is also usable with air drills, flexible shafts, and portable electric drills. Key type chuck can be supplied. Distributed by **Price & Rutzebeck**, Box 30, Hayward, Calif.

▲ For more details circle NED-508 M9 on enclosed inquiry slip ▲

## NONWOVEN FILTER FABRIC for air or liquid filtration

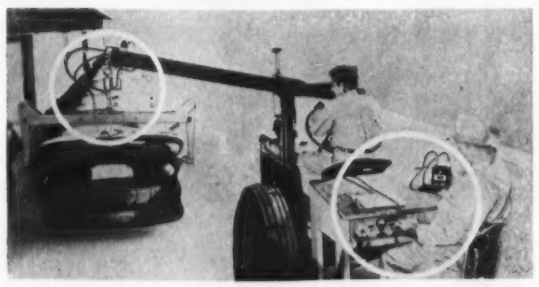


Controlled, graded pore size of Hovolite low density nonwoven filter fabric affords high loading capacity and long life. Applications include removal of all types of dusts, mist, fumes, smoke, and pollen from air and gases; removal of solids from liquids; separation of immiscible liquids; noise absorption; and respirator uses. Fabric uses a microfine rayon fiber in a matrix of Vinyon. Its thermoplastic properties make it heat-sealable to itself and permit it to be laminated and heat-formed or shaped. Thicknesses from 0.1 to 1 in. are offered in rolls, sheets, die cut pieces, or fabricated parts. All grades are engineered for specific uses; efficiencies can be controlled up to 99 per cent plus. Made by **Hollingsworth & Vose Co.**, 112 Washington, East Walpole, Mass.

▲ For more details circle NED-509 M9 on enclosed inquiry slip ▲

## ELECTRIC WEIGHT SCALE for materials handling operations

Usable with lift trucks, tractors, cranes, and other materials handling equipment, this M116 electric scale is available in capacities from 1000 to 100,000 lb. It

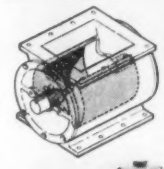


consists of two strain gage cells, an amplifying box, and a digital type indicator. It is powered by vehicle or other 6-v battery. Unit weighs any load as it is lifted. Made by **Gilmore Industries, Inc.**, 13015 Woodland Ave., Cleveland 20, Ohio.

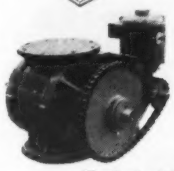
▲ For more details circle NED-510 M9 on enclosed inquiry slip ▲


**Q: Why specify Fuller Rotary Valves and Feeders?**

**A:** Fuller rotary valves and feeders are products of more than 30 years of designing and manufacturing equipment for handling dry bulk materials. They are built to save you money in the long run!



**Fuller rotary valves** feature close clearances and a double seal, which prevent leakage in the closed position. Knife edges and "V" slots at the ends of the rotor avoid sticking due to packed material. Built for either manual or remote motor control.



**Fuller feeders** are ruggedly built to precision tolerances for long, efficient service handling Portland cement, cement raw materials, pulverized coal, hydrated lime, etc. Available in wide range of sizes, with round or rectangular openings. Standard construction, cast iron; special metals if desired.

Technical literature is available upon request.

Fuller Company General Solutions — **Fuller** ...pioneers in harnessing AIR

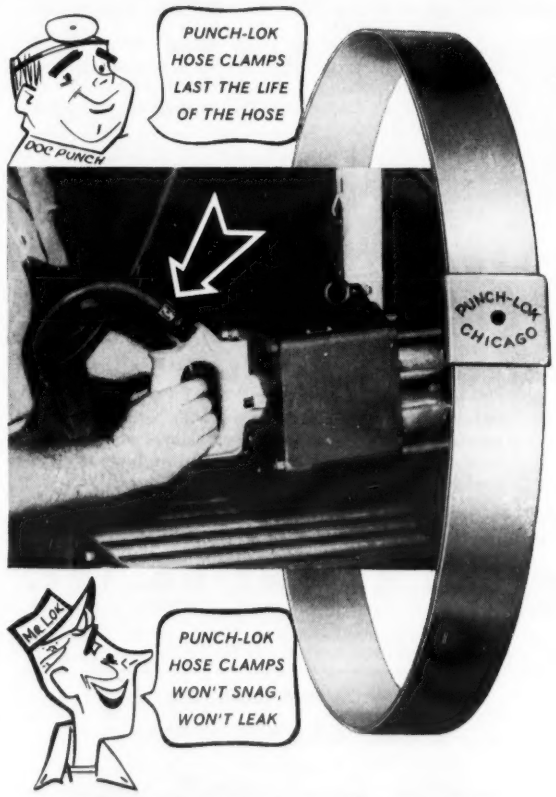
1181 F-19

**FULLER COMPANY**
154 Bridge St., Catasauqua, Pa.
SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
Offices in Principal Cities

▲ For more details circle NED-511 M9 on enclosed inquiry slip ▲



**small components do a BIG JOB!**




**PUNCH-LOK HOSE CLAMPS**

. . . are very small in comparison to many of the machines on which they're installed, but PUNCH-LOK Hose Clamps do a BIG, BIG job. Their absolute dependability in clamping vital hose connections makes high production schedules possible. They are on the job day after day . . . never require maintenance or repairs. Easy and quick to apply, once clamped they stay clamped for the life of the hose.

**See your nearby Punch-Lok distributor or write for free descriptive catalog.**

"The sign of a GOOD Hose Clamp"

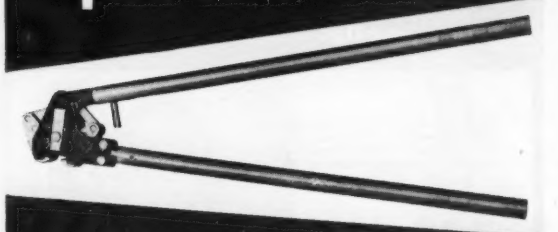
**PUNCH-LOK Company**

8917

Dept. A, 321 N. Justine Street, Chicago 7, Illinois

▲ For more details circle NED-512 M9 on enclosed inquiry slip ▲

# partial seal



# impossible

The new USS Steel Strapping Tool—Model 69—makes it impossible to put a half seal on USS Flat Steel Strapping. Once the sealing motion is started, it cannot be reversed; the motion must be completed in order to remove the sealer. That's why every crimp is tight, why every seal does a superior holding job. Model 69 makes an efficient interlock type seal on ¾" x .028" and ¾" x .035" USS Flat Steel Strapping.

*Technical assistance* and further information can be obtained from our nearest office. Write for a free copy of our Sweet's Catalog insert. USS is a registered trademark

**U. S. Steel Supply Division of United States Steel**

USS Steel Strapping formerly Gerrard Steel Strapping

▲ For more details circle **NED-513 M9** on enclosed inquiry slip ▲



# NEW!

**Crane Formula 425-A Thread Compound prevents seizing and galling**

It's the best lubricating compound you can get for high loading, high temperature installations up to 1050° F.—screwed or flanged. Prevents seizing and galling damage to pipe threads, bolts and gaskets . . . gives tight metal-to-metal contact. Joints open readily—and you can re-use materials—even after long exposure to high heat. Conforms to Military Spec. MIL-A-907. Stocked in 1- and 4-pound cans by your local Crane Branch or Crane Wholesaler.

**FREE SAMPLE . . . Just ask your Crane Representative**

**CRANE** Crane Co., Gen'l Off.: 836 S. Michigan Ave., Chicago 5, Ill.

▲ For more details circle **NED-514 M9** on enclosed inquiry slip ▲



LARGE OR SMALL

SHORT OR TALL

# Electroline Fittings

ARE THE CHOICE OF ALL

There's an Electroline Wire Rope Fitting to suit your every need. Actual tests have proved their great holding power in all applications, regardless of size or type.

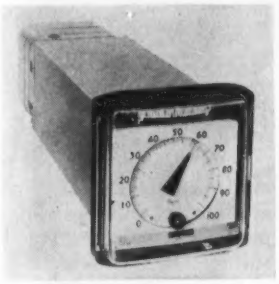
Electroline Fittings are installed easily and safely with ordinary tools—by unskilled labor in a matter of minutes—without the danger of molten metal or acids—without blow torches or special tools.

To give you the whole story of Electroline Wire Rope Fittings, we have prepared a pocket-size illustrated catalog, filled with information of sizes and types. Why not send for your copy today?

**Electroline** PRODUCTS
THE SUPERIOR SWITCHBOARD & DEVICES COMPANY
Box 590, Canton 1, Ohio

▲ For more details circle **NED-515 M9** on enclosed inquiry slip ▲

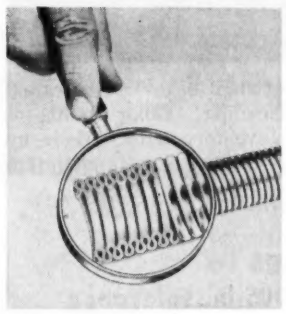

## PROCESS DIAL INDICATOR
### shows one or two variables



Transcope 90K Series process variable indicating unit can be adapted to more complex operating forms in the field. Indication of one or two variables on separate dials; continuous indication of set, process, and valve pressures in a control station; and inclusion of one or two electric or pneumatic high-low alarms for each variable are among available forms. When necessary, the indicator slide can be replaced by a 4-in. strip chart recorder slide in less than 1 min without housing or piping changes. Panel mounted instrument has powered pointers and is compatible in size and appearance with other Taylor Transcope instruments. Made by **Taylor Instrument Cos.**, 95 Ames St., Rochester 1, N. Y.

▲ For more details circle **NED-516 M9** on enclosed inquiry slip ▲

## CORRUGATED METAL HOSE
### for —450 to 1200°F hydraulic use



RF-69 flexible corrugated metal hydraulic hose withstands cyclic hydraulic shock loading caused by pump pulsations, rapid opening and closing of automatic valves, and sudden stops of hydraulic actuated equipment. It functions in a −450 to 1200° F temperature range and withstands peak impulse pressures of 4500 psi. Outer and inner plies are made of stainless steel, and the center ply is a high damping capacity metal. Entire hose is encased in a stainless steel braid. It takes standard end fittings which are attached mechanically, or by welding, brazing, or soldering. Sizes from ¼ to 1¼ in. are being made, with sizes to 2 in. planned. Made by **Flexonics Corp.**, 1315 S. Third Ave., Maywood, Ill.

▲ For more details circle **NED-517 M9** on enclosed inquiry slip ▲

## THICKNESS GAGE
### magnetic type is self-contained

Thickness of coating on flat or curved surfaces can be measured with this single - probe miniature layer gage. The self-contained magnetic meter is used on any magnetic material between the extremes of electrical sheet steel and cast iron. Thickness of nonmagnetic coating materials such as paint, lacquer, plastics, nonferrous metals, and porcelain enamel is measured directly, and without damaging the coating. Available ranges are 0 to 0.005, 0 to 0.010, and 0 to 030 in. Pointer clamp holds the reading after the instrument is removed. Price is $58. Made by **O. Hommel Co.**, Maple Avenue, Carnegie, Pa.

▲ For more details circle **NED-518 M9** on enclosed inquiry slip ▲

## CONTAMINATION SAMPLER
### checks liquids from closed systems

Equipment as well as instructions for taking liquid samples from pressurized systems to determine particle contamination are included in this Bomb Sampling Kit. A Monitor or disposable plastic holder with a filter disc is closed to prevent contamination. After sampling, the filter disc is removed for microscopic examination and counting of particles. Filter can also be scaled for radioactivity, or weighed to determine amount of contaminant. Kit is usable for checking aviation, hydraulic, testing, and nuclear systems. It contains needed adapters and connectors, metal syringe, valve, and 48 Monitors in a fitted magnesium carrying case. Offered by **Millipore Filter Corp.**, Bedford, Mass.

▲ For more details circle **NED-519 M9** on enclosed inquiry slip ▲

# MASTIPAVE

Takes brutal beating for years without showing sign of wear. Deadens noise, lowers worker fatigue. Stays clean with less care, less cost. In rolls or tiles, lay low-cost Mastipave anywhere without surface preparation. Get all the facts!

**FREE ILLUSTRATED BOOKLET!**

Send for "Every Building Needs Pabco Mastipave." Case histories, technical data. Pabco Mastipave, Fibreboard Paper Products Corp., 475 Brannan St., San Francisco

▲ For more details circle **NED-520 M9** on enclosed inquiry slip ▲



# VALUABLE GUIDE

selects the right lock washer every time

***get your copy today!***

Shows why Shakeproof® Lock Washers lock tight . . . *stay* tight! Describes complete line and illustrates types and sizes for every need. Contains helpful data on applications and ordering. Write for your free copy now.

**SHAKEPROOF** "FASTENING HEADQUARTERS"®
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois

▲ For more details circle **NED-521 M9** on enclosed inquiry slip ▲



**you'll know you're using *APEX* insert bits when your fastening costs go down!**

The notches in an Apex insert bit are more than mere identification. This groove—and only one is really necessary—is precisely positioned to accept the retaining ring in Apex bit holders. This original, patented Apex development prevents the bit from dropping out of the holder during the driving operation—just one more reason why your fastening costs are lower when you use Apex tools.

**CATALOG 30-C**—Apex Screwdriving Tools, to drive Phillips, Frearson (Reed & Prince), Slotted, Clutch Head, Socket Head (Allen Type), Hex Head and special screws.

*Ask* **APEX** *for the answer to your fastening problem!*

**THE APEX MACHINE & TOOL COMPANY**
1046 S. Patterson Blvd. • Dayton 2, Ohio

▲ For more details circle **NED-522 M9** on enclosed inquiry slip ▲

Cut ANY Shape in Metal...

with a BEVERLY THROATLESS SHEAR!

- Capacities to 3/16" in mild steel
- Make clean, knurl-free cuts in any metal to capacity
- High Carbon High-Chrome Blades
- Built to last a lifetime

*Here's What a Beverly Can Do!*

Cuts made in 18 ga. metal with Model B-1

Beverly Shears are the most versatile metal shearing tools you can use. Unique shoulder design permits any cut . . . rack and pinion gives great power with little effort. Alloy steel body for maximum rigidity and strength. Made in 4 models.

Model B-3 with Ball Bearing Hold Down

*Write for illustrated circular —or see your Beverly Distributor.*

Beverly SHEAR MFG. CO.
3016 W. 111th Street Chicago 43, Ill.

▲ For more details circle NED-523 M9 on enclosed inquiry slip ▲



save valuable production time and maintenance manpower...

powerful HEIN-WERNER HYDRAULIC PUSHMASTER RAMS in capacities of 4, 10, 20, 30 and 60 tons

Hein-Werner Hydraulic PUSHMASTER Rams provide compact, controlled power anywhere needed to handle tough lifting, moving, pressing, ejecting, clamping, straightening, pushing or bending jobs. Write today for free copy of detailed PUSHMASTER catalog No. 25, or see your industrial distributor.

Hein-Werner also supplies industry with a full line of hydraulic jacks in capacities from 1½ to 100 tons; portable TAL BENDERS for smooth, uniform material bending in ranges from ⅜" to 8"; and "Push and Pull" Hydraulic Jacks and Attachments in 4, 10 and 20 tons capacity.

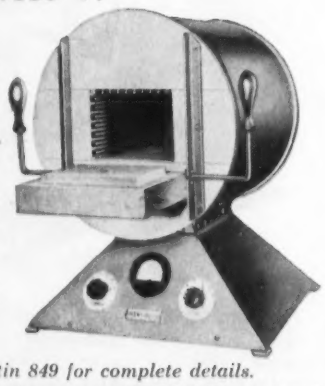
Hein-Werner CORPORATION WAUKESHA, WISCONSIN

▲ For more details circle NED-524 M9 on enclosed inquiry slip ▲



"Multiple Unit" MUFFLE FURNACE

*Temperatures to 1850° F.*



This furnace is a complete self-contained unit with the temperature indicating and controlling devices conveniently located in the pyramidal base. Four interchangeable and reversible heating units of heavy gauge Nickel Chromium Wire installed in grooved refractory plates completely surround the heating chamber.

*Write for Bulletin 849 for complete details.*

| Type | Watts | Chamber | | | Price |
|---|---|---|---|---|---|
| | | W. | L. | H. | |
| 051-PT | 1150 | 5¼ | 8 | 4 | $ 145.00 |
| 052-PT | 1440 | 4¼ | 10 | 3 | 210.00 |
| 054-PT | 2070 | 5¼ | 12 | 4 | 245.00 |
| 056-PT | 3400 | 7½ | 14 | 5 | 315.00 |
| 012148-PT* | 6500 | 11¼ | 14 | 8 | 1050.00 |

Operating voltage either 115 or 230 volts A.C. only except 012148-PT is 230 volt only.
*Automatic temperature control $230.00 additional.

HEVI-DUTY

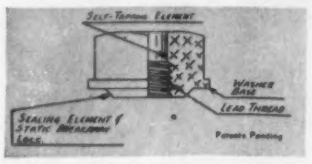
A DIVISION OF BP C BASIC PRODUCTS CORPORATION

HEVI-DUTY ELECTRIC COMPANY, MILWAUKEE 1, WISCONSIN

Industrial Furnaces and Ovens, Electric and Fuel • Laboratory Furnaces • Dry Type Transformers • Constant Current Regulators

▲ For more details circle NED-525 M9 on enclosed inquiry slip ▲

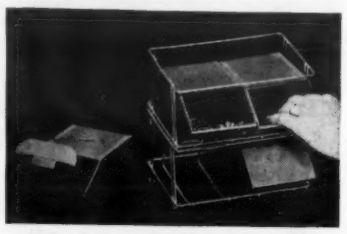

## NYLON STOP NUTS
### lock, seal, and insulate




Brilok stop nuts made of Zytel 101 nylon resin are one-piece, washer-faced, resilient hexagon nuts which are simultaneously self-tapping, locking, sealing, and insulating. They are stocked in ivory white, but available in colors. The stop nut friction-locks at any position along screw shank. Further drive on bearing surface of fastened parts extrudes the cone at the base of the nut for an effective seal of the hole against liquid or gas escape. Made by **Pheoll Mfg. Co.**, 5700 W. Roosevelt Rd., Chicago 50, Ill.

▲ For more details circle NED-526 M9 on enclosed inquiry slip ▲

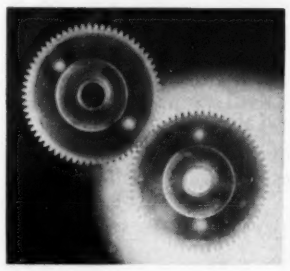
## SMALL PARTS HOLDER
### used with fiberboard boxes



Efficient handling of small parts on assembly lines results from use of this electrically welded steel wire frame for fiberboard parts boxes. The stackable frame has Lustre-zinc plating to resist corrosion. Fiberboard boxes can be closed at night or removed for cleaning. Color coding of boxes minimizes chance of inventory error. Made by E. H. Titchener & Co., 57 Clinton St., Binghamton, N. Y.

▲ For more details circle NED-527 M9 on enclosed inquiry slip ▲

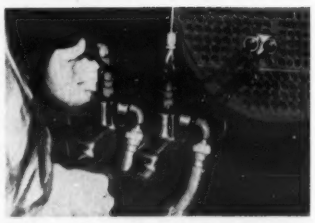
## CAST PLASTIC GEARS
### machined to 0.0005-in. tolerance



Low dielectric constant and dissipation factor at microwave frequencies are exhibited by Rexolite No. 1422 cast plastic gears and other components. Plastic compares to free-turning brass in machining qualities, does not exhibit cold flow, and has high tensile strength. It is highly inert chemically. Gears and parts machined to 0.0005-in. tolerances are used in airborne instrumentation and in microwave metering devices. Made by **Rex Corp.**, West Acton, Mass.

▲ For more details circle NED-528 M9 on enclosed inquiry slip ▲

## TUBE EXPANSION CONTROL
### rolls up to 30 tubes per minute



This Dual Spindle tube expansion control unit combines two Model 1000 Airetrol units into one pneumatically operated unit. Tool easily rolls up to 30 tubes per minute, or 1800 per hour. It is accurate to 0.001 in. and will roll tubes ranging in size from ½ to 1 in. Accuracy is unaffected by variance in air pressure. Torque can be set from as low as 0.5 to 37 lb-ft at 90 psi. Unit operates at 1500 rpm and is also available in 700, 550, and 400-rpm models. Made by **Airetool Mfg. Co.**, 328 S. Center St., Springfield, Ohio.

▲ For more details circle NED-529 M9 on enclosed inquiry slip ▲

## REVERSE RELAY
### safeguards air controlled processes

Pneumatically-controlled industrial processes are afforded fail-safe protection in case of air line failure with this Type 783 reverse relay which gradually reverses the action of air operated valves, motors, and dampers. When air supply pressure falls to zero, equipment reverts to its normally-closed position and shuts down. The 1 9/16 in. diameter by 2⅝ in. long unit mounts easily on valve or damper motor, behind control panels, or next to wall-mounted controlling instrument. Made by **Powers Regulator Co.**, 3440 Oakton St., Skokie, Ill.

▲ For more details circle NED-530 M9 on enclosed inquiry slip ▲


NORWALK GAS and AIR
Check Valves
high capacity...low pressure drop

*Disc-Type—Gas and Air*—Horizontal or vertical operation. Aluminum or stainless steel discs. Temperatures to 400°F. Screwed or flanged. From ½" to 16".

*Disc-Type—Gas and Air—Low and High Pressures*—Steel construction. Negligible differential at full capacity. Outside indicator on disc, counterbalanced. Aluminum or stainless steel discs. From 10" to 42".

*Diaphragm-Type—Gas and Air*—Horizontal or vertical types. Cast iron. Back pressure to 50 psi. Temperatures to 200°F. Screwed or flanged. From ½" to 6".

Eclipse

Industrial Combustion Division
ECLIPSE FUEL ENGINEERING CO.
1128 BUCHANAN STREET
ROCKFORD, ILLINOIS

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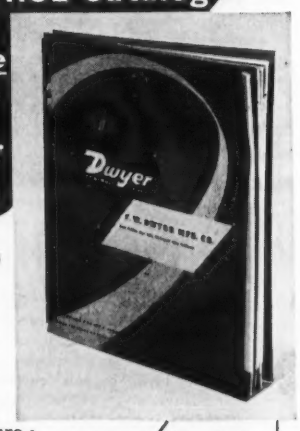


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F. W. DWYER MFG. CO.
P.O. BOX 373-Q, MICHIGAN CITY, INDIANA

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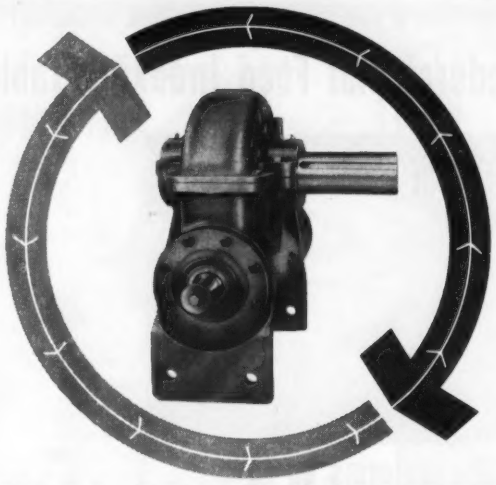

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**• Low Cost • Compact • Heavy Duty • Worm Gear**

Economize on speed reduction costs with Tulsa Speed Reducers. For intermittent heavy duty operation at slow speeds, you can't beat Tulsa Speed Reducers for initial low cost, minimum maintenance and outstanding performance. A wide range of models is available with maximum output torques ranging from 875 to 26,000 pound-feet. Some models available with automatic worm brake. For complete information write for Bulletin No. SR-56.

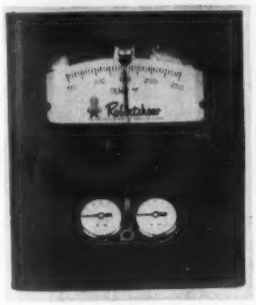
TULSA WINCH
DIVISION OF VICKERS, INCORPORATED
TULSA OKLAHOMA

▲ For more details circle NED-534 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-535 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-536 M9 on enclosed inquiry slip ▲

## INDICATING CONTROLLER
### for temperature or pressure



Fully compensated thermal system is built into this indicating pneumatic controller for temperature or pressure. Designed as a controller, transmitter or receiver-controller, it is easily serviced and its functions easily changed in an installed position. Reset action is an option. No tools are required to quickly adjust the control point, proportional band, control action, and reset action. Made by **Robertshaw-Fulton Controls Co.**, Fulton Sylphon Div., Box 400, Knoxville 1, Tenn.

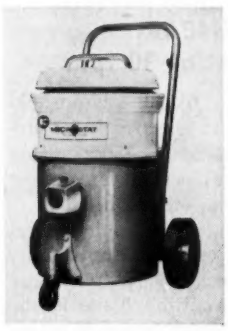
▲ For more details circle NED-537 M9 on enclosed inquiry slip ▲

## MESH CONVEYOR BELTS
### transverse wire crimp adds strength

Greater rigidity and less elongation after installation and use result from the addition of a Diagonal Crimp to the transverse wire of metal mesh conveyor belts. Grooves thus produced run in the same direction as the spiral wires and at the same angle as the weave. Design also contributes to smoother hinging and greater bearing area between crimped and spiral wires. Made by **Cambridge Wire Cloth Co.**, Cambridge, Md.

▲ For more details circle NED-538 M9 on enclosed inquiry slip ▲

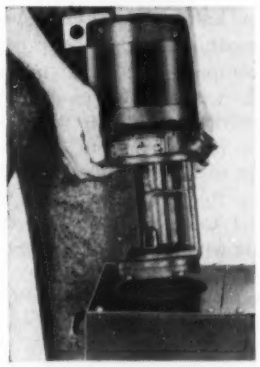
## VACUUM CLEANER
### has bacteria-trapping filter



Impaction filter incorporated in the Microstat vacuum cleaner is composed of a maze of minute glass fibers which trap bacteria attached to dust particles and block their exit. The 43-lb cleaner has an airflow of 145 cfm and is equipped with three wheels for maneuverability. Changeover for wet pick-up is rapidly made. The exhaust is gently diffused at a 30-degree angle above horizontal to prevent stirring up of dust on walls and ledges. Muffler-equipped cleaner also has two porous filters with an area of over 800 sq in. which collect all dust and dirt. Made by **Kent Co.**, 827 Canal St., Rome, N. Y.

▲ For more details circle NED-539 M9 on enclosed inquiry slip ▲

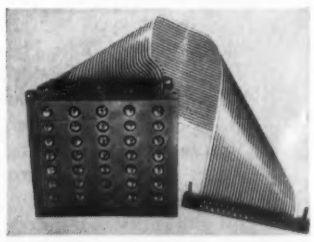
## COOLANT PUMPS
### handle viscosities to 10,000 ssu



Built-in flange and discharge simplify mounting of the H-7000 Series coolant pump. Operating at 3450 rpm, it pumps all types of coolants and liquids with viscosities up to 10,000 ssu. Its impeller shaft is enclosed and protected. Pump body will drop through a 4½-in. diameter hole. Pumping continues to ⅜ in. from the bottom of the pump. Immersion depths of 6 and 8½ in. are available. Made by **Graymills Corp.**, 3705 N. Lincoln Ave., Chicago 13, Ill.

▲ For more details circle NED-540 M9 on enclosed inquiry slip ▲

## FLEXIBLE PRINTED CIRCUITS
### facilitate wiring crowded layouts



Consisting of thin copper conductors sandwiched between insulating layers of flexible Union Carbide Krene vinyl sheeting, Flexprint wiring is easily routed through crowded layouts. Wiring is suitable for diverse applications involving complex circuits in computers, switchboards, relays, and industrial controls. Printed circuit inertness makes possible service under corrosive conditions. Circuits are made by **Sanders Associates, Inc.**, 131 Canal St., Nashua, N. H.

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We do have one-layer Calsilite insulation for high temperature lines and equipment. Illustrated below is a two-layer application used in special installations.

Modern calcium silicate insulation for use on today's high temperature pipes and vessels. Available in various thicknesses of pipe coverings and blocks.

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PIONEERS IN CALCIUM SILICATE INSULATION

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# SKIL...most powerful of 5 leading SANDER-GRINDERS

**...COMPARISON PROVES IT!**

| 9" Models | SKIL #852 | Brand A | Brand B | Brand C | Brand D |
|---|---|---|---|---|---|
| Amp. Rating | 12 | 10 | 8 | 11.5 | 10 |
| Max. H.P. | 2.48 | 2.2 | 1.3 | 1.70 | 1.92 |
| Net Wt. | 12¾ | 12¾ | 14 | 12¾ | 15¾ |
| **7" Models** | **SKIL #853** | **Brand A** | **Brand B** | **Brand C** | **Brand D** |
| Amp. Rating | 12 | 10 | 8 | 8.5 | 9 |
| Max. H.P. | 2.48 | 2.2 | 1.4 | 1.69 | 1.03 |
| Net Wt. | 12¾ | 12¾ | 14 | 12¾ | 13¾ |

SKIL Sander-Grinders are low on maintenance, too! Straight flow ventilation keeps interiors free of harmful metal dust and abrasives, a chief cause of disc sander failure. Dust proof switch, beefed-up gears and bearings keep them on the job, out of the shop. Ask your SKIL distributor for a demonstration and Free copy of 58-page SKIL catalog. Or mail coupon.

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PUMP CAM

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# CORROSION-RESISTANT THERMOSTAT

Here's the really rugged temperature control for applications involving corrosive chemicals, fumes, or moisture. The Fenwal Series 18000 THERMOSWITCH® Unit is Type 316 stainless steel throughout for *complete* protection and long, troublefree service. Installs easily. Coupling head has hexagonal mounting section with standard male pipe threads at each end. Unit may be attached directly to electrical conduit or to explosion proof fitting. Ideal for photo processing, laboratory and experimental testing, food processing, bleaching, dyeing, or similar applications. Provides smooth, precise control from −100 to 600°F. Rating: 10 amps, 115VAC, or 5 amps, 230VAC. For complete details, write Fenwal Incorporated, 2712 Pleasant St., Ashland, Massachusetts.

ANOTHER EXAMPLE OF HOW *Fenwal* Controls Temperature ...*Precisely*

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# ZOR-X REPAIRS ROADWAYS IMMEDIATELY

THERE'S NO NEED to wait for warm, dry weather to fill chuck-holes in your driveway, parking lot, or any road surface. ZOR-X, the new, all-weather patching material can be used when chuck-hole is damp and in temperature as low as 15° above zero.

No special equipment is required... no base preparation or priming... simply pour it out—tamp it down—drive over it *immediately*. There is nothing to add or mix, and when used will last for years under heaviest loads.

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**10703 Quebec Avenue, Cleveland 6, Ohio**

MONROE MAINTENANCE MATERIALS

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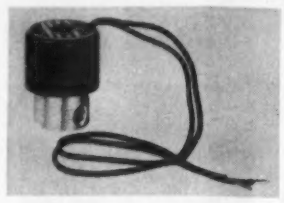
## SOLENOID VALVE
### for vacuum to 540-psi use



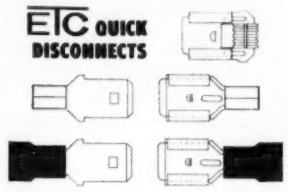
Master-mite compact solenoid valve is usable on air, water, petroleum product, coolant, oxygen, hydrogen, acetylene, and other services. Globe, bottom outlet, angle left, and angle right styles are made in 1/8 and 1/4-in. NPT sizes, and in conduit and grommet types. Ten orifice sizes from 3/64 to 1/4 in. can be used from vacuum to 540 psi. Standard units have moisture resistant 115-v ac coils, but 12, 24, 208, and 460-v ac coils can be ordered. Bodies are brass or 18-8 stainless steel. Made by **Marsh Instrument Co.**, 3501 Howard St., Skokie, Ill.

▲ For more details circle NED-547 M9 on enclosed inquiry slip ▲



## LOCKING TERMINALS
### quick-disconnect type has wide use

Insulating and noninsulated models and straight and flag types are available in this series of quick-disconnect terminals. They provide push-on, high pressure, spring-loaded connections and incorporate a locking action. Easily crimped on wire, they have automotive, appliance, switch, and control applications. Wire range is 18 to 14 AWG. Made by **ETC Inc.**, 990 E. 67th St., Cleveland 3, Ohio.

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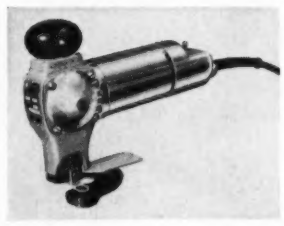
## HAND-HELD ELECTRIC SHEAR
### slices cold-rolled steel at 30 fpm

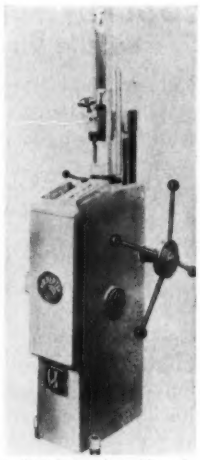


This 6½-lb hand-held No. 18 electric shear delivers up to 2500 cutting strokes per minute to cut its way through 30 ft of 18-gage cold-rolled steel in 1 min. Shear is easily guided along pattern lines since cutting blade is visible at all times. It will handle Monel metal or stainless steel up to 20 gage. Tool retails for $110. Made by **Black & Decker Mfg. Co.**, 762 E. Pennsylvania Ave., Towson 4, Md.

▲ For more details circle NED-549 M9 on enclosed inquiry slip ▲



## SPRING TESTER
### checks 600 an hour

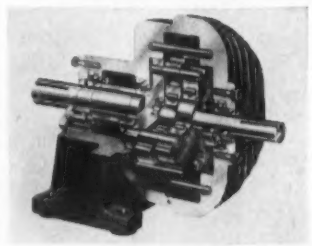


A weighted pendulum swinging on knife edges is employed by this medium-load spring tester for compression and extension springs. Adjustable stops and tolerance markers allow up to 600 tests to be made per hour. Capacity is 1 oz to 225 lb, with spring lengths up to 11 13/16 in. and diameters up to 4 in. Magnified load is shown on an illuminated dial. Spring length is shown in decimals on a steel rule. Vernier allows readings to 0.001 in. Offered by **Carlson Co.**, 3457 Weidner Ave., Oceanside, L. I., N. Y.

▲ For more details circle NED-550 M9 on enclosed inquiry slip ▲



## REDUCTION DRIVE
### cycloid design reduces size



Substantial decrease in size is achieved by cycloid design of Hi-Range speed reduction drives. Units provide from 30 to 80 lb-in. of torque per pound of reducer weight. They are virtually noiseless in an oil-sealed cast iron housing, and load is always carried by a number of teeth to minimize wear. Typical uses are special or integral design applications where weight and space are considerations. Sizes range from small instrument units to drives for large machine tools. Made by **Black Tool, Inc.**, 1924 S. Navajo St., Denver 23, Colo.

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Economical, Versatile, Absolutely Accurate Automation!

# Federal Dial Feed Indexing Table

**performs up to 300 indexes per minute!**

Federal Dial Feed Indexing Table performs hundreds of operations that formerly required specialized, high-priced equipment. Use on your present equipment, on Federal Presses, or independently with air cylinders, drills and tapping heads, or drill presses. Performs up to 20 multiple station operations—delivers up to 300 indexes per minute. The savings are almost unbelievable. Cam-type indexing mechanism assures perfect accuracy—smoothest operation. Write today for complete information.

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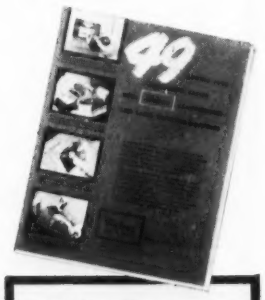
# New Booklet Tells How to SAVE MONEY on 49 Marking Jobs...

**Send for a copy of Weber's helpful "Value Analysis" guide to lower marking and addressing costs!**



Here is an especially prepared booklet that can help you solve marking problems facing your company. It pinpoints 49 places where Weber Marking Systems speed up production line marking, shipment addressing, etc.

Shows how to save time and materials, reduce errors without disturbing a single work routine. It is a useful guide to "where" and "how" your company can cut costs and improve efficiency in multiple marking and addressing everywhere in the plant.

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Dept. 25L
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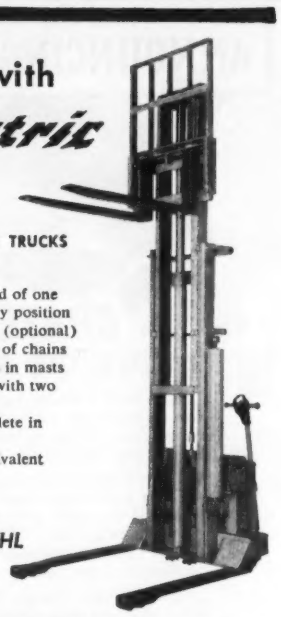

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...WITH *Servisafe* **BRACKET UNITS!**

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T-E 8636-TE

THE THOMPSON ELECTRIC CO.
P. O. BOX 873-F • CLEVELAND 22, OHIO

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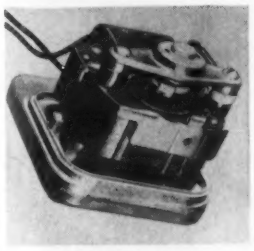
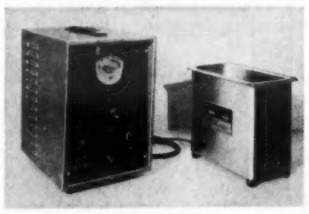
## SUB-FHP BRAKING MOTORS feature split-second braking



Instantaneous control in vending machines, valve-closing devices, displays, and similar equipment is made possible by split-second braking feature on SpeedWay Model 40 unreduced and gear reduced subfractional horsepower motors. Brake is lever-type, pivoting design which reacts to stop motor revolutions the instant electrical impulse is ended. Made by **Thor Power Tool Co.**, Speedway Div., 1421 Barnsdale Rd., LaGrange Park, Ill.

▲ For more details circle NED-558 M9 on enclosed inquiry slip ▲

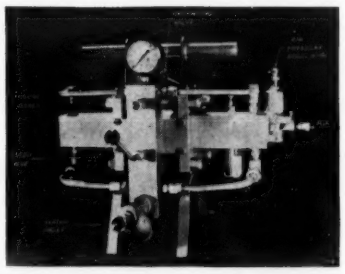
## ULTRASONIC CLEANER for small parts cleaning use



One - gallon polished stainless steel tank of the Model 100 ultrasonic cleaner is deep drawn with rounded corners to facilitate the rinsing out of contaminants. The tank is 9¼ x 5 x 6 in. and 25 per cent of its bottom is covered with driving elements having a radiating surface of 12 sq in. An average power output of 60 w and peaks of 240 w are delivered by the 115-v ac, single-phase, 60-cycle generator. Front panel switching permits a choice of either of two transducers. Price is $350. Made by **National Ultrasonic Corp.**, 111 Montgomery Ave., Irvington, N. J.

▲ For more details circle NED-559 M9 on enclosed inquiry slip ▲

## PRESSURE TESTING UNIT for castings, vessels, tubes, tanks



Compact and portable Model 5-TU pressure testing unit generates pressures from 250 to 5000 psi from 80 - psi compressed air. It is suited for testing hollow castings, forgings, pressure vessels and fittings, autoclaves, pipes and tubes, tanks, and assemblies, or for burst testing when required. A regulator valve permits quick pressure changes. Only connections required are to existing water and air lines and to piece undergoing test by high pressure flexible hose or tubing. The 80-lb unit measures 15 x 18 x 15 in. Made by **Logemann Brothers Co.**, 3134 W. Burleigh St., Milwaukee 45, Wis.

▲ For more details circle NED-560 M9 on enclosed inquiry slip ▲


**Speed Packaging— Fill Direct from Original Drum!**

**Graco's Fast-Flo Pump speeds** packaging of fluids — moves material *direct from drum* to filling operation. Accurate meter control can deliver exact amount as required. Lightweight Fast-Flo is easily changed from drum to drum without slowing assembly line. Pump uses air only when delivering fluid. Can empty full size drum in less than three minutes!

**Send for more information** about the amazing Graco Fast-Flo pump that's suited for large or small packaging volume. The economical Fast-Flo can transfer, agitate and dispense. Use it for a supply pump, for mixing or spraying. It handles fluids as thin as alcohol — as thick as glue. Here's the pump that can save you money!

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*(See Phone Book Yellow Pages, Spraying, for Graco Suppliers)*

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HIGH FREQUENCY INDUCTION **HEATING UNITS**

The Lepel line of induction heating equipment represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for numerous industrial applications.

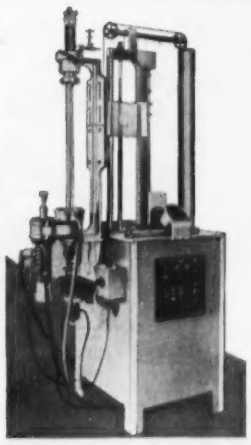
If you are interested in induction heating you are invited to send samples of the work with specifications. Our engineers will process and return the completed job with full data and recommendations without any cost or obligations.

**FLOATING ZONE FIXTURE FOR METAL REFINING AND CRYSTAL GROWING**

A new floating zone fixture for the production of ultra-high purity metals and semi-conductor materials. Purification or crystal growing is achieved by traversing a narrow molten zone along the length of the process bar while it is being supported vertically in vacuum or inert gas. Designed primarily for production purposes, Model HCP also provides great flexibility for laboratory studies.

*Features*

- A smooth, positive mechanical drive system with continuously variable up, down and rotational speeds, all independently controlled.
- An arrangement to rapidly center the process bar within a straight walled quartz tube supported between gas-tight, water-cooled end plates. Placement of the quartz tube is rather simple and adapters can be used to accomodate larger diameter tubes for larger process bars.
- Continuous water cooling for the outside of the quartz tube during operation.
- Assembly and dis-assemby of this system including removal of the completed process bar is simple and rapid.



Model HCP

Electronic Tube Generators from 1 kw to 100 kw.
Spark Gap Converters from 2 kw to 30 kw.

*WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information.*

All Lepel equipment is certified to comply with the requirements of the Federal Communications Commission.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

▲ For more details circle NED-562 M9 on enclosed inquiry slip ▲

**NEW DESIGN FREEDOM**—Today this fabric is being tested by the military in space craft only. Soon, however, many non-defense applications will be using G-E Quartz Thread to solve heat problems and act as a thermal barrier. Give you any ideas? Maybe it can help solve a design problem for you, too!

STEEL — GLASS-REINFORCED PLASTIC — QUARTZ-REINFORCED PLASTIC

**FLAME TEST**—Here are samplings of materials burned with an oxyhydrogen torch at 5000°Fahrenheit. Note how steel and glass reinforced plastic melted and burned through.
Only the General Electric quartz-reinforced plastic (at right) withstood the flame and retained its structural strength – yet the flame was kept on this sample over three times as long!

**Test proves new G-E light-weight Quartz Thread helps solve heat problems of outer space**

**ROCKS TO ROCKETS**—General Electric's new Quartz Thread is spun from tiny monofilaments that are only 1/10th as thick as human hair. Made from rock-like crystals, the monofilament is twisted into thread . . . then woven into a fabric that withstands thermal erosion and retains its tensile strength at elevated temperatures far in excess of any other textile. Cloth made from this new G-E Quartz Thread provides plastics with a greater per cent retention of strength, making them suitable for rocket and missile applications.

**FREE BROCHURE**—Send for free 5-page brochure on new G-E Quartz Thread. Gives general description, covers physical properties (tensile strength, elongation, viscosity, density), details the chemical properties, and provides information for ordering. Write: General Electric Co., Willoughby Quartz Plant, Dept. NED-129, Willoughby, Ohio.

*Progress Is Our Most Important Product*

**GENERAL ELECTRIC**

▲ For more details circle NED-557 M9 on enclosed inquiry slip ▲

## KEEP PNEUMATIC CONTROLS FROM CLOGGING

**Dollinger Staynew Filters** "capture" all dirt, oil droplets, and moisture . . . allow only clean dry air to pass into delicate controls of transmitters, amplifiers, recorders, etc.

**Staynew Model CPHB-4D** offers peak efficiency (5-6 microns) at pressures to 150 p.s.i., temperatures to 100°F. Made of lightweight, durable die-cast aluminum . . . bracket provides easy installation . . . single bolt assembly for easy maintenance.

**Available for** ¼", ⅜", and ½" pipe connections. See your local Dollinger representative, or write for engineering data sheet. Dollinger Corporation, 49 Centre Park, Rochester 3, New York.

STAYNEW FILTERS — DOLLINGER

*Specializing in dry type filters for 35 years*

▲ For more details circle NED-563 M9 on enclosed inquiry slip ▲



# FREE CABINETS!

Included at no extra cost with each complete or sectional order of the new DUNDICK DeLuxe Precision Pins

THE PIN WITH A MILLION USES

- Core Pins
- Perforators
- Gages
- Set-up Pins
- 2" Long

**$1.25** per pin in lots of 10 or more in your choice of sizes.

**721 sizes—from .030 to .750**

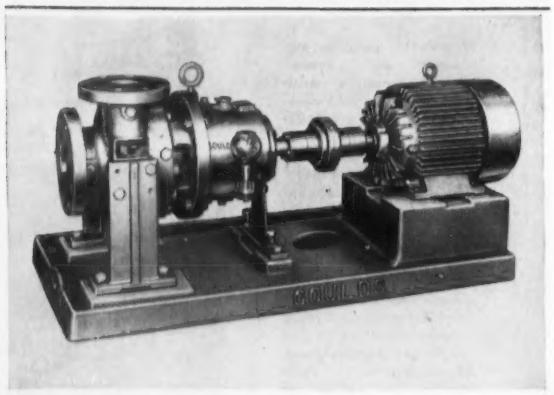
**GUARANTEED ACCURACY** within a tolerance of plus or minus fifty millionths

- Each cabinet complete with lacquered hardwood block. Contains properly identified and sized holes to hold pins.
- Heavy-duty all-steel construction.
- Cabinets interlock to form compact unit.

**DUNDICK** TOOL WORKS, INC. 3410 West 31st St. Chicago 23, Illinois

▲ For more details circle NED-564 M9 on enclosed inquiry slip ▲





## NEW PETROLEUM PROCESS PUMP!

NOW . . . A HEAVY-DUTY PUMP DESIGNED TO API 610 SPECIFICATIONS

Goulds Fig. 3775 centrifugal fills the gap between conventional centrifugals and extremely-high-temperature types. Casing is all *steel*. Maximum temperature: 600°F. Maximum working pressure: 550 lbs. with 300-lb. flanges.

All the pump you need to do most jobs in oil refineries, gasoline absorption plants, petrochemical plants and for hot-water circulating applications.

You can get the Goulds Fig. 3775 in 11 sizes with ratings to 850 GPM and heads to 350 feet. Vertically split casing with back pull-out design saves time on maintenance and inspection. Standardization of parts permits a high degree of interchangeability to cut your inventory of spare parts.

**Write for Bulletin 724.1, giving all the details. Goulds Pumps, Inc., Dept. NED 129, Seneca Falls, N. Y.**

**GOULDS PUMPS**

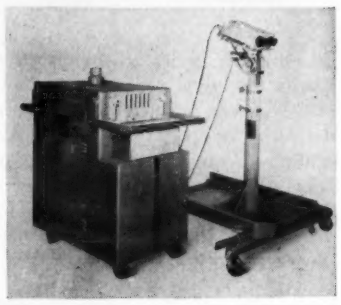
▲ For more details circle NED-565 M9 on enclosed inquiry slip ▲


## CIRCUIT BREAKER
### three-pole unit has 100-amp rating

Only 3 in. wide and based on the same 1-in. module dimension as other Stab-lok circuit breakers, the Model 3P100 can be used in any combination with them. The heavy duty 100-amp, 240-v, three-phase unit has air conditioning, machine tool, and motor circuit applications. It is used as a plug-in "main" circuit breaker in a standard three-phase load center, or as a "branch" breaker in either a load center or NALP panelboard. Connectors are approved for copper or aluminum conductors. Thermal-magnetic action trips the breaker on prolonged overloads, but eliminates nuisance tripping. It also has fast magnetic action for tripping when short circuits occur. Made by **Federal Pacific Electric Co.**, 50 Paris St., Newark 1, N. J.

▲ For more details circle NED-566 M9 on enclosed inquiry slip ▲

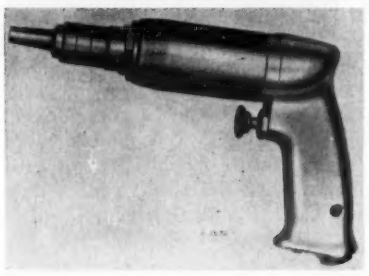
## ROD ROLLING SPEED METER
### measures speed of hot rod in mill



Infrared is employed to measure the speed of red-hot steel rod being processed in rolling mills. Device uses a double infrared-sensitive photoelectric element to check the length of time it takes leading and trailing ends of a length of rod to pass two points a known distance apart. Speed of rod is quickly obtained. This portable equipment consists of a mobile detecting head and an electronic power and computing section. Equipment should prove valuable for other work as well as in improving and controlling rod rolling. Developed by **Lindly & Co.**, 248 Herricks Rd., Mineola, N. Y.

▲ For more details circle NED-567 M9 on enclosed inquiry slip ▲

## AIR-POWERED SCREWDRIVER
### handles No. 8 self-tapping screws

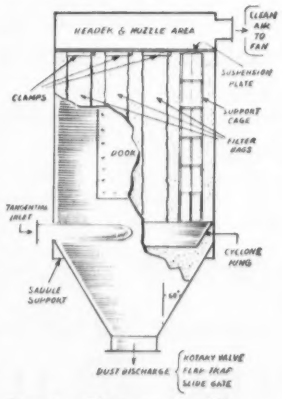


Exhaust noise is reduced to a whisper in the Cushionair air-powered screwdriver which has a special muffler, five-vane motor, dual-speed throttle, built-in lubricator, and speed regulator. User has choice of three clutches and of either pistol grip or lever throttle handles. The 000 Series driver is offered in 450 to 4500-rpm nonreversible and 350 to 3400-rpm reversible models. It handles No. 12 free-running, or No. 8 self-tapping screws. Side-to-center distance is 25/32 in. Made by **Ingersoll-Rand Co.**, Phillipsburg, N. J.

▲ For more details circle NED-568 M9 on enclosed inquiry slip ▲

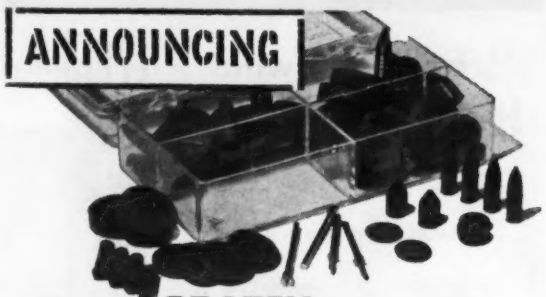
## DUST COLLECTOR
### self-cleaning, rated to 12,000 cfm

Ceiling suspended or floor mounted cylindrical dust collector for use in coal, chemical, cement, gypsum, steel, and similar heavy industries is available in six sizes with ratings from 2000 to 12,000 cfm. Unit receives dust-laden air through a tangential cyclone ring where heavier materials are dropped. Lighter materials collect on outside of filter tubes which are intermittently flexed taut by bursts of compressed air. This shake-off action, adjustable as to duration and interval, keeps tubes clean throughout operation. Made by **Flex - Kleen Corp.**, 406 S. Plymouth Court, Chicago 5, Ill.




▲ For more details circle NED-569 M9 on enclosed inquiry slip ▲


# ANNOUNCING



The new **CRATEX**

**TOOL & DIE MAKERS KIT**

**The world's finest rubberized abrasives for deburring, smoothing and polishing** tools, dies, patterns, molds, models, instruments and component parts.

Kit contains 80 wheels and points in the most popular sizes and shapes, equally assorted in four grit textures, coarse (C), medium (M), fine (F), extra fine (XF)... plus four mandrels for ⅛" chuck... packaged in plastic box, compartmented for fast selection. $7.50 complete.

Order your new Cratex Tool & Die Makers Kit #777 through your distributor—or, send your order to us for delivery by the Cratex distributor nearest you.

**CRATEX** *Free 8-page catalog available on request.*

**MANUFACTURING CO., INC.**

1600 ROLLINS ROAD, BURLINGAME, CALIFORNIA

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# NEW PISTON RING CATALOG BY AUTO-DIESEL

**A must for all Die Casting Machine Users:**

*Highlighting this new catalog are:*

- Dieloy Cast Iron plunger rings for Hot Chamber Machines
- Hardened Stainless Steel plunger rings
- "NIHARD STEEL RINGS" for Hot Chamber Machines
- NIHARD STEEL PLUNGER RINGS for tips on Cold Chamber Machines
- Tips & shot well sleeves are also manufactured for the die casting machines

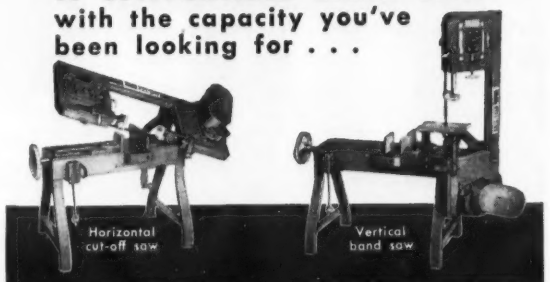
**Catalog on Request**

**THE AUTO-DIESEL PISTON RING CO.**
3141 Superior Avenue • Cleveland 14, Ohio

▲ For more details circle NED-571 M9 on enclosed inquiry slip ▲



# The New WELLS MODEL 58-B
## A CONVERTIBLE BAND SAW
**with the capacity you've been looking for . . .**




**COMPACTLY BUILT • MODESTLY PRICED**

**Here's the all new Wells Model 58-B . . . a metal saw designed and built for double duty—double value. It's a compact, rugged, well guarded, extremely versatile unit . . . economically priced. As a horizontal cut-off saw, Model 58-B features quick-action vise (swivels to 45°); automatic shut-off; adjustable guides. Capacity: 6" x 10" rectangular shapes; 6" dia. rounds. For vertical use, swing head to upright position and install work table. Optional wheel-handle unit provides complete mobility. Write for complete information.**

*The Pioneers of Horizontal*

Wells — METAL CUTTING BAND SAWS

**WELLS MANUFACTURING CORPORATION**
1313 Harding Street • Three Rivers, Mich.

▲ For more details circle NED-572 M9 on enclosed inquiry slip ▲

# There's an Easier Way!

Break away from old fashioned cutting methods . . . save time, temper and patience. Now . . . zip through 3/16" aluminum, Fiberglas, plastics, plastic laminates, even 16-gauge steel, with minimum effort . . . maximum speed . . . with the KETT Panel Master Saw. Its performance is outstanding on metal laminates such as Mirawal, Metlwal, Met-L-Wood and Amorply. 2½" diameter saw blades give full ⅝" depth cut. Leaves accurate, smooth milled edge that requires no sanding or finishing. Amazingly easy to use . . . extra rugged for long, hard service.

*Powered by heavy duty, industrial type 110 volt AC/DC portable 5/16" capacity electric drill motor. Ball bearing equipped drive for smoother operation.*

write for Catalog E-48

THE KETT TOOL COMPANY
5051 Madison Rd.
Cincinnati 2, Ohio

KS-3AM Panel Master Saw

▲ For more details circle NED-573 M9 on enclosed inquiry slip ▲



NEW REVOLUTIONARY DESIGN FOR LOW COST MACHINE MOUNTINGS

THE NEW EASY BETTER WAY TO INSTALL MACHINERY

Scientifically constructed suction cells anchor machine to floor. No bolts, lag screws or cement needed.

FABCEL Pads

Patent Applied For

Write for new catalog

- Control Vibration
- Absorb Impact
- Reduce Noise

FABREEKA PRODUCTS COMPANY, INC.
1190 Adams Street, Boston 24, Mass.
Representatives in principal cities
In Canada: International Equip. Co., Ltd.
Royal Bank Bldg., Montreal

- made by the makers of Fabreeka -

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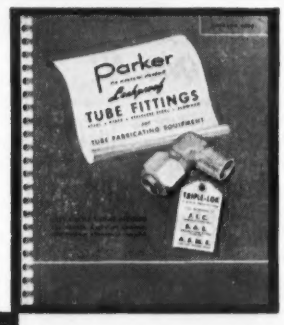


Pick the right tube fitting quicker with this 128-page Parker Data Book

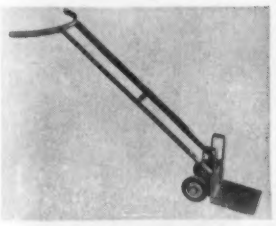
All the data to design or "tube up" an industrial system is included in this 128-page Parker Tube Fittings Catalog. Guides you in proper tube selection. Gives installation hints, also descriptions and dimensions of all Parker Fittings: "Triple-lok," "Ferulok," "Intru-lok," "Weld-lok." "Braze-lok," in steel and stainless steel, copper, aluminum, brass, for any industrial system from instrument lines to high pressure hydraulic lines.

Ask your Parker distributor, listed in the Yellow Pages, for a Parker 4300 Catalog. Or write . . .

Parker FITTINGS AND HOSE DIVISION
17325 Euclid Avenue • Cleveland 12, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION

▲ For more details circle NED-575 M9 on enclosed inquiry slip ▲

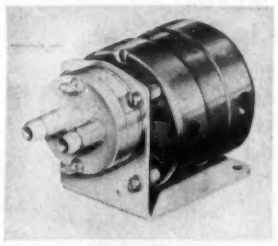

## SMALL PACKAGE TRUCK handles up to 350-lb loads



Small, heavy packages, tote pans, or kegs weighing up to 350 lb are easily handled by the Toter truck which weighs only 44 lb and has a 10 x 10½ x ¼-in. toeplate. Hand grips on safety curved handle are placed in natural position for minimum lifting effort. Truck is 36 in. high by 10½ in. wide. Rubber tired wheels are replaceable. Made by **Colson Corp.**, 7 S. Dearborn St., Chicago, Ill.

▲ For more details circle NED-576 M9 on enclosed inquiry slip ▲

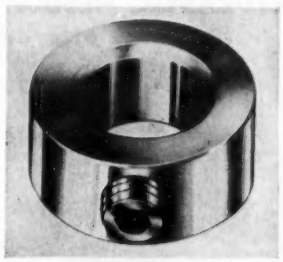
## SANITARY METERING PUMP dispenses a variety of liquids



Liquids with watery to highly viscous consistencies are delivered by the Maisch plastic sanitary metering pump. Action is instantaneous, and liquids are dispensed with uniform, nonpulsating flow. The 115-v, 60-cycle, shaded-pole induction drive motor with overload protection is insulated for refrigerated operation. It will pump liquids ranging from 38 to 175° F. Inlet and outlet fittings take slip-on rubber tube connections. Made by **Mechanical Products Corp.**, 1716 W. Hubbard St., Chicago 22, Ill.

▲ For more details circle NED-577 M9 on enclosed inquiry slip ▲

## SHAFT COLLARS made of stainless steel



Precision bored shaft collars of cold drawn stainless steel have chamfers machined on inside and outside corners. Cup point stainless steel socket screws hold them in place. Collars are stocked in 31 bore sizes from ⅛ to 2⅛ in. in 1/16-in. increments. Made by **Climax Metal Products Co.**, 863 E. 140th St., Cleveland 10, Ohio.

▲ For more details circle NED-578 M9 on enclosed inquiry slip ▲

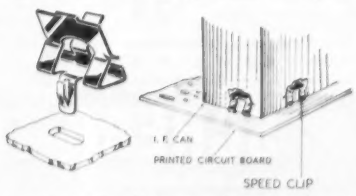
## ELECTRIC STAPLERS join up to 36 sheets of bond paper

Model B5E2 Bostomatic electric stapler, one of two models for continuous office stapling jobs, drives staples automatically when work is inserted against its combination back gage and switch release. Foot or knee-operated Model B5E3 is actuated by a small switch mounted on floor or under a desk or table. Machines handle up to 36 sheets of 16-lb bond or mimeograph paper. Both are easily loaded with 210 standard ¼-in. staples and operate on 115-v ac. Made by **Bostitch, Inc.**, 2012 Briggs Dr., East Greenwich, R. I.

▲ For more details circle NED-579 M9 on enclosed inquiry slip ▲

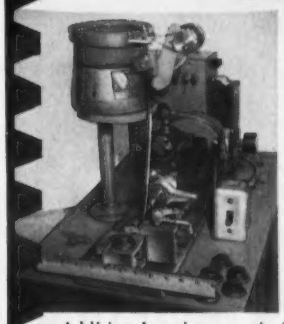
## PRINTED CIRCUIT CLIP holds electronic components

Aluminum intermediate frequency cans are fastened to phenolic printed circuit boards by the dual-function Speed Clip which also serves as a ground. Clip is pushed over the bottom edge of the can by hand. Two barbs provide positive retention and a good ground. Lower half of the clip is pushed into a mounting hole in the panel. A spring tab holds the unit in place for final soldering. Removal is by expanding the barbed leg away from the can. Made by **Tinnerman Products, Inc.**, Box 6688, Cleveland 1, Ohio.




▲ For more details circle NED-580 M9 on enclosed inquiry slip ▲


new hopper feeder
QUADRUPLES SET SCREW INSERTION RATES



Labor costs cut by 75%

Changeover from manual to automatic insertion of set screws is now easier and more profitable than ever. More profitable because this new, compact, Setko Hopper Feeder requires less space — and embodies advancements and refinements in design to make for greater operating efficiencies. It is now possible to actually quadruple insertion rates over the hand method, while cutting labor costs in half.

Additional savings result from a reduction in rejects and floor loss. Users report "rejects have been cut to almost zero and floor loss has been eliminated!"

**Feeds any type of set screw with any point.** Hex Socket, Fluted Socket, Slotted or Slabbed heads can all be oriented and fed with equal efficiency.

SEND TODAY FOR FULL INFORMATION

Send for recommendations and quotations. Ask for Catalog 23 showing the full line of Setko Socket Screw Products.

SETKO Set Screw & Mfg. Co.
130 Main Street
Bartlett, Illinois
730

▲ For more details circle NED-581 M9 on enclosed inquiry slip ▲



*Mix* **big batches** *of fluids in a jiffy*

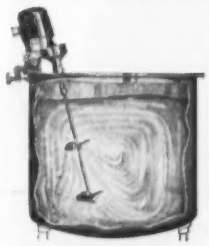
*Suspend heavy solids—no job too tough for these rugged mixers*

Yes, you can mix batches as big as this 6000-pound vat of clay slurry—and still get *portable* mixer convenience!

Get swift uniformity with LIGHTNIN Portables—at the flip of a switch. Powerful propeller stream sweeps the tank bottom, suspends solids, *tumbles* and *rotates* the batch violently—or gently—as you prefer.

**Results guaranteed.** You take no risk when you specify LIGHTNIN Portables. Results are unconditionally guaranteed. Thousands of LIGHTNINs are in use; many 25 years and more.

You get widest choice of ball-bearing motors. Quickly removable true-running shaft cannot loosen or jam. Mixer locks instantly in any position. Thirty portable models to choose from, electric or air driven; direct or gear drive; sizes ⅛ to 3 HP. For full details, request 28-page illustrated Catalog B-108.



GET FAST, THOROUGH MIX in any open tank or container. No swirl, no vortex, no dead spots with LIGHTNIN double-action mixing.

**Mixers for permanent mounting, too**—full selection of LIGHTNINs for tanks to 6 million gallons. Sizes ¼ to 500 HP. For details, request illustrated Catalog B-109.

Lightnin® Mixers

MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc.
165-n Mt. Read Blvd., Rochester 3, N.Y.
*In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.*

▲ For more details circle NED-582 M9 on enclosed inquiry slip ▲

NOW! Adjustable Diameter and Open
THOMSON BALL BUSHINGS

The BALL Bearing for all your LINEAR MOTIONS

LOW FRICTION • ZERO SHAKE OR PLAY
ELIMINATE BINDING AND CHATTER
SOLVE SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

*The various types cover a shaft diameter range of ⅛" to 4". Small sizes available in Stainless Steel. Write for literature and name of our representative in your city.*

THOMSON INDUSTRIES, Inc.
Dept. G, MANHASSET, NEW YORK

Also manufacturers of NYLINED Bearings
Sleeve Bearings of DuPont NYLON

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Franklin UNISEAL MOTOR

CUTS PARTS AND ASSEMBLY COST OF YOUR PRODUCT

Close-coupling of Franklin Motor to your product eliminates adapter casting, stub shaft, outboard bearing, coupling, etc. S/S motor shaft available to specifications. "Franklineer" your product and cut costs.

REDUCES PRODUCT WEIGHT

⅓ through 2 h.p., 56-frame NEMA and special designs. With or less base. Horizontal or vertical operation.

Cavity permits use of mechanical shaft seal.

FREE DATA FOLDER

Franklin Electric Co., Inc.
BLUFFTON, INDIANA

▲ For more details circle NED-584 M9 on enclosed inquiry slip ▲

EASTERN CENTRIFUGAL JOB-RATED PUMPS

Original equipment manufacturers have chosen the Eastern D-11 Centrifugal Pump for 24,897 successful installations. With eighteen pounds of compact design (9¾" x 4⅝"), this close-coupled, single-stage centrifugal pump with induction type motor provides an ideal job rating for many installations.

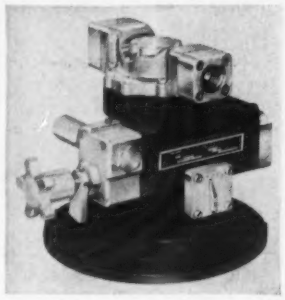
The D-11 and other Eastern Centrifugal Pumps are available in 18-8 Type 303 and Type 316 Stainless Steel, Monel, Hastelloy "C", Cast Iron and Bronze. They range from ⅙th to ¾ H.P. with capacities up to 70 G.P.M., pressures to 65 P.S.I.

SEND FOR BULLETIN 120-R

Eastern INDUSTRIES, INC.
100 SKIFF ST., HAMDEN, 14, CONN.

▲ For more details circle NED-585 M9 on enclosed inquiry slip ▲

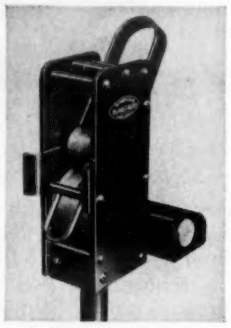
## AXIAL PISTON PUMP
### for up to 5000-psi hydraulic use



Originally developed to Air Force specifications, this Series 1208 hydraulic pump is now available for high or low speed industrial hydraulic service. Of variable volume, axial piston type, it can be used at 1200 to 4000 rpm for 3000 or 5000-psi operation. Capacity at 1200 rpm and 3000 psi is 8½ gpm. It has fast compensator control and optional direction of rotation. Various mountings adapt it to all industrial applications. Made by **Kline Mfg. Co.**, Galena, Ohio.

▲ For more details circle NED-586 M9 on enclosed inquiry slip ▲

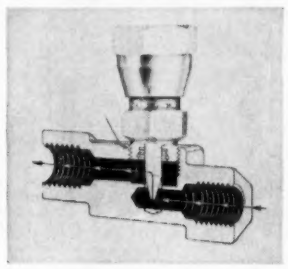
## CABLE MEASURING METER
### for diameters up to 2 in.



Heavy wire, cable, and flexible materials with diameters up to 2 in. are accurately measured in feet and inches by the Model HCM bench type cable length meter. Its direct-drive Veeder-Root counter measures up to 1000 ft and has instant zero reset. Proper spring tension is maintained to prevent slippage. A swivel wire guide adapter is built in for measuring small wire sizes. An adjustable height floor stand is optional. Made by **Hykon Mfg. Co.**, 135 E. State St., Alliance, Ohio.

▲ For more details circle NED-587 M9 on enclosed inquiry slip ▲

## HYDRAULIC NEEDLE VALVES
### five sizes offered in three metals



Long pointed standard needle (shown) for broad range throttling control, vernier needle for fine control, and a large volume throttling action needle are offered in these hydraulic system needle valves. They are made of forged aluminum, steel, and stainless steel in ⅛, ¼, ⅜, ½, and ¾-in. female Dryseal pipe sizes and equivalent aeronautical tube sizes. Operating pressures are 3000 psi for aluminum and 5000 psi for steel. All interior parts are stainless steel. Available types are standard, dial and knob for in-line mounting (shown), and dial and knob for panel mounting. Made by **Auto-Ponents, Inc.**, 3001 Grant St., Bellwood, Ill.

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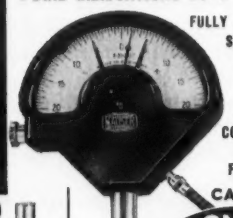
• DIRECT READING TO .00005"
• FULL RANGE OF DIAL .004"
• DIAL GRADUATIONS 20-0-20



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LOS ANGELES: 3337 West Olympic Blvd., Los Angeles 19, Cal.
CHICAGO: 5045 W. Harrison, Chicago 44, Ill.
When writing to any of the above locations, refer to DEPT H

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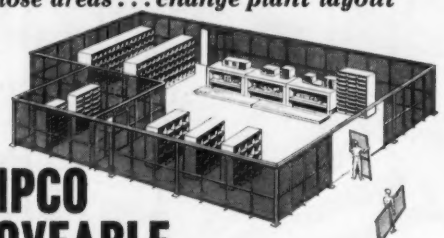

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**NO SPECIAL TOOLS . . . NO SPECIAL CREWS NEEDED**—*your own men* set them up, relocate them . . . *at less than the cost of wood framing and wire netting!* Everything you need—Standard panels plus all accessories (doors, windows, top panels, bars, braces, etc.)—available immediately from factory stock. Made of tough, machine woven steel wire, Wipco Partitions protect areas against theft and loss, permit ventilation and visibility . . . economical to maintain. *For firm price, send free hand sketch of areas to be enclosed.*

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Wire and Iron Products, Inc.,
1727 Sixteenth St., Detroit 16, Mich.

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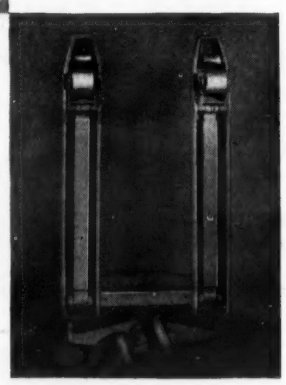
• Patented leakproof hydraulics with overload and overflow valves
• Hard-chrome plated pistons in honed cylinders
• Precision-machined oil lines—no pipes, no tubings, no packings
• Magnetic oil filter

DOWN UNDER

• Box-section type push rods
• Taper roller bearings on load rollers
• Torsion-proof hardened joints
• Effortless operation through pallet entry & exit rollers



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• Hand-operated 4½" lift in only 3 strokes
• Constant lowering speed regardless of load
• All valves easily accessible from outside
• Low tapered forks for maximum clearance

Full 6 months warranty

MULTITON FULLY HYDRAULIC PALLET TRUCK
Still only $358

Capacities: 2200, 3500, 4400 lbs. Skid adaptors and/or brake optional. Available in all standard fork lengths with full variety of wheels to fit every requirement. Write for full information.

STOKVIS MULTITON CORP.
Dept. NED-12, 18 Secatoag Ave.
Port Washington, N. Y.

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When New Molds Stick use IMS SILICONE FLUID

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Shorten costly break-in periods! Simply spray on this perfect parting agent from self-dispensing aerosol! Useful too in PATTERN MAKING — releases patterns from master molds with minimum surface defects. Remember . . .

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FICTION and FACT

FICTION: Removal of odors from the air requires bulky, expensive equipment—necessitating larger fans and motors to overcome resistance.

FACT: R P Super Filter Coat, applied to R P Aluminum Filters, automatically removes both dust *and odors*, with no other equipment required.

Multi-Velocity Industrial

AIR FILTERS

When you specify R P Industrial Filters, you gain the tremendous advantage of inexpensive, automatic odor-removal through the use of R P Super Filter Coat water soluble adhesive. Odors are actually removed from the air stream by absorption, held by the adhesive, and prevented from re-circulating. It is *NOT* a simple masking process—it's true, positive odor-removal. Through the reduction in make-up air requirements possible with this true odor removal, reductions in the size of heating and cooling equipment and in operating costs are available. And this important odor-removing function is, of course, a plus feature—in addition to effective dust removing properties and the like-new efficiency restored to the filter after washing and re-coating.

Permanent-type light weight, rugged, aluminum R P Industrial Filters have other advantages too. Their light weight makes them easier to handle and wash; eliminated heavy structural design in filter bank construction; reduces operating and maintenance costs through longer service life and easier handling. Write for complete information on the benefits of R P Industrial Air Filters.

RP Products of Research

RESEARCH PRODUCTS Corporation
Dept. 445, Madison 10, Wisconsin

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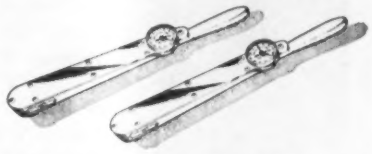
## TORQUE METERING TOOLS
### show how tight nut is torqued

Pointers work in either direction on the dial of slip-pointer and follow-up pointer Torqometers, depending upon their use in measuring the torque of right or left hand nuts. Tools are available with ¼, ⅜, ½, ¾, and 1-in. square drives ranging from 0-15 lb-in. to 0-1000 lb-ft. Needle of slip-pointer model does not move until torquing is completed. It retains its reading until the dial face is turned, facilitating use in dark or restricted areas. Follow-up pointer type tool has two needles, both of which move as long as pressure is applied. When pressure is released, one drops back to zero and the other remains at the reading attained. Made by **Snap-on Tools Corp.**, 8110 28th Ave., Kenosha, Wis.



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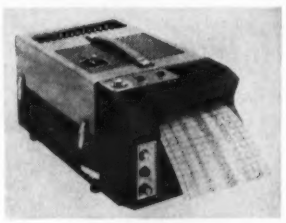
## PAPER SHREDDER
### delivers three shred widths

Up to 400 lb of newspaper stock can be shredded hourly by this paper shredder, suited for plant or office use. It destroys confidential papers quickly. It also converts large quantities of waste paper to packing material, or for baling. Leather, various fibers, and scrap plastic can also be processed. Machine is adjustable for shred widths of 3/32, 3/16, and ½ in. Use of straight knives and a fluted feed roll prevent jamming. It can be used on table or bench, or mounted on a stand with casters. Made by **Industrial Shredder & Cutter Co.**, S. Ellsworth Avenue, Salem, Ohio.

▲ For more details circle NED-595 M9 on enclosed inquiry slip ▲

## DIRECT-RECORDING OSCILLOGRAPH
### records 8 or 14 data traces



Continuous monitoring and visual presentation of stress, pressure, vibration, and other phenomena are provided by Series 621 Standard direct - reading oscillograph. The portable instrument records 8 or 14 data traces on 6-in. wide recording paper and ejects it for secondary exposure and study. Record transport can be operated in three speed ranges, starting at 0.2 ipm and extending to 60 ips. The 621S uses miniature light-beam galvanometers available in frequency response from direct current to 10,000 cps natural response and 6000 cps flat response. Record is brought out by exposure to ambient fluorescent lighting. Modular plug-in components facilitate inspection and service. Unit operates on 115-v ac. Made by **Midwestern Instruments**, Box 7186, Tulsa, Okla.

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## ELEVATING PLATFORM
### for maintenance and other uses

Loads up to 1000 lb can be adjusted to any height from 3 to 7 ft on this portable maintenance and work platform. Solid tire, 8-in. diameter, swivel casters have four-position rotary locks. Rear casters have roll locks. A tow bar and pintle hook permit towing. Welded subassembly sections are bolted together for ease of dismantling. The 77 x 36-in. platform deck of nonskid expanded metal is positioned to various heights by locking pins. A telescoping ladder and removable handrails are included. Made by **Aero-Test Equipment Co.**, Box 10627, Dallas 7, Tex.

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ALLIS-CHALMERS METAL DETECTOR

This electronic counter-spy assures positive protection against sabotage of quality by stray metal particles in your process or production line. Magnetic or non-magnetic metal particles, no matter how deeply embedded, immediately trigger a warning or reject mechanism when they pass the compact Allis-Chalmers metal detector.

This device is economical to operate, permits conveyor speeds to 600 fpm, and is easily incorporated into any production setup. Ask your local A-C man for Bulletin 15B7217B, or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS A-C A-5629

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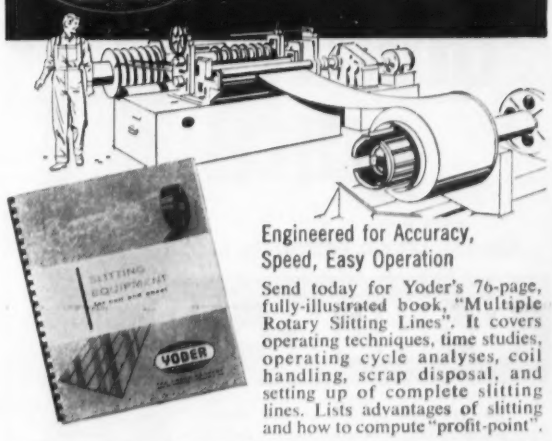
YODER SLITTERS



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Send today for Yoder's 76-page, fully-illustrated book, "Multiple Rotary Slitting Lines". It covers operating techniques, time studies, operating cycle analyses, coil handling, scrap disposal, and setting up of complete slitting lines. Lists advantages of slitting and how to compute "profit-point".

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TOUGH BUYERS DEMAND

# REZNOR unit heaters

In 70 years, Reznor factory replacement has been less than 1/10 of 1%! Reznor flame-tests each unit before shipment so it comes to you in top running order, and stays that way. Tough buyers know that Reznor heaters cost less over the years.

Write for the catalogue that details all the features: aluminized steel heat exchanger, 2-speed fan, low-voltage controls.

**REZNOR** Manufacturing Co., Dept. 41-D, Mercer, Pa.

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## Bowser remote control valves for hazardous liquids

*Do these things*

1. Simultaneously control flow of liquid in pipe and start or stop pump.
2. Operate one or more discharge lines from single remote power pump.
3. Provide safety factor required for insurance approval.

**DEAD MAN CONTROL**

Bowser Figure 221 Remote Control Valve consists of a quick-acting bronze gate valve and explosion-proof mercury switch integrated for easy, in-line mounting on any pipe line. Valve and switch are actuated by weighted handle. When handle is released, flow and pump stop simultaneously.

WRITE FOR BULLETIN 221 BOWSER INC.

Regional Offices: ATLANTA, BOSTON, CHICAGO, CLEVELAND, DALLAS, KANSAS CITY, LOS ANGELES, NEW YORK

1387 E. CREIGHTON • FORT WAYNE, IND.

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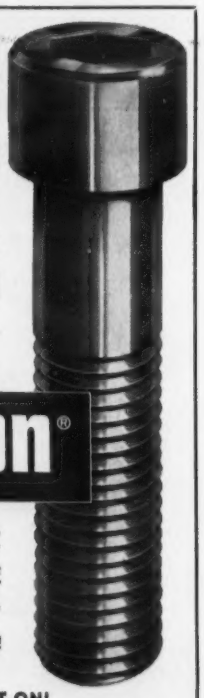
# QUANTITY QUALITY QUICK



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THE BRIGHTON SCREW & MFG. CO.
1957 Reading Road, Cincinnati 2, Ohio

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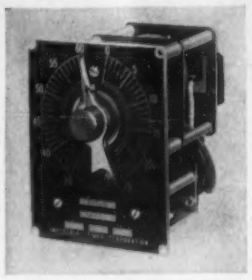
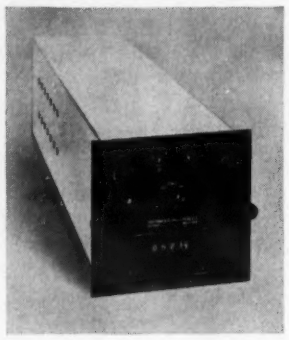
## INTERVAL TIMER has ranges from 1 sec to 3 hr



Started from a momentary pulse, the Series PAF panel mount interval timer has a load rating of 15 amp on 115-v, 60-cycle ac noninductive. It automatically resets in less than 0.02 sec at the end of its preset time cycle. Wiring is on a six-place terminal strip at the rear. Twelve models have time cycles from 1 sec with a minimum setting of 1/60 sec to 3 hr with a minimum setting of 3 min. Repeat accuracy is ±3 to 5 milliseconds over a 1-sec scale. Units are offered for 115 and 230-v, 25, 50, 60, and 400-cycle ac operation. Made by **Industrial Timer Corp.**, 1407 McCarter Highway, Newark 4, N. J.

▲ For more details circle NED-604 M9 on enclosed inquiry slip ▲

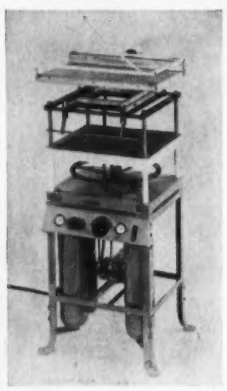
## DIGITAL TORQUE INDICATOR produces true average readout



Torque fluctuations from equipment on test are integrated by the Model 756TA digital torque indicator to produce true averaged readout. A compact filter network compensates for power output fluctuations inherent in most rotating equipment by integrating all such fluctuations above 3 cps. The servo null-balance instrument includes an amplifier, multiple turn tapped precision slide wire, and a servo balancing motor for driving four number wheels for the digital readout. Readability is 1 part in 10,000. Indicator accuracy is ±0.1 per cent. Encoded output is optional. Made by **Performance Measurements Co.**, 15301 W. McNichols Rd., Detroit 35, Mich.

▲ For more details circle NED-605 M9 on enclosed inquiry slip ▲

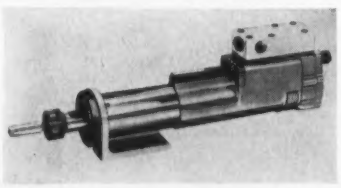
## PLASTIC FORMING PRESS forms sheets up to 18 in. square



Three-dimensional forming operations are performed by mechanical stretch, vacuum, and blow methods in the Model 18A Di-Acro plastic press. It takes 18-in. square sheets of such thermoplastic materials as polystyrene, vinyls, butyrates, and acrylics. Skin and blister packaging operations can also be performed. Press is a self-contained unit with motor-driven vacuum-pressure pump. Platen is raised and lowered by screw action on the center column. A pivot mounted radiant heater panel has a maximum temperature of 660° F. Inserting and removing plastic material is speeded by a hinged clamp frame. Press price is $845. Made by **O'Neil-Irwin Mfg. Co.**, 582 Eighth Ave., Lake City, Minn.

▲ For more details circle NED-606 M9 on enclosed inquiry slip ▲

## AUTOMATIC TAPPERS for portable or stationary uses



Positive controlled pitch with the lead screw pitch identical to that of the tap is a feature of Tru-Thread tapper Models 93B-00 and 93B-5. Thread stripping or tearing are prevented and clean, accurate threads are assured. Two sizes for either portable or stationary applications cover hole sizes from No. 2 to 1 in. They have adjustable strokes to a maximum of 1½ and 3 in. and a minimum of 3/16 in. for both. Return (depth) position and start position are adjustable. The depth adjustment repeats within 0.005 in. Tappers can be adapted to automated applications. A pressure signal at the end of the operating cycle will actuate indexing, clamping, or other operations. Made by **Gardner-Denver Co.**, 1350 Front St., Quincy, Ill.

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How to select

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NEW Bulletin 218

Complete up-to-date information on Cone-Drive double-enveloping worm gear drives. Provides all specification data plus "how to select and order".

**CONE-DRIVE GEARS**
DIVISION MICHIGAN TOOL COMPANY
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*Division of American-Marietta Co.*

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Sealed and pre-lubricated McGILL CAMROL® bearings

Protect your roller follower applications for longer life with sealed CAMROL bearings. McGill packs high load capacity, precision accuracy, and positive seals into standard bearings. Avoid building up special units. The SCF series is complete with integral stud. In the SCYR series an inner race provides for shaft mounting. Black ferrous oxide finish adds corrosion resistance. Roller diameters range from ¾" to 4".

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McGILL MFG. CO., Bearing Div., 101 N. LAFAYETTE ST., VALPARAISO, IND.

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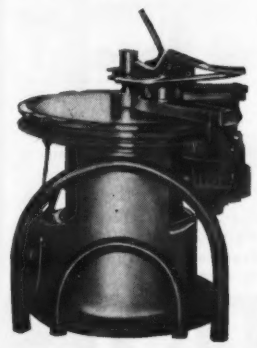
Complicated pipe, tube or structural metal bends are a cinch with Pedrick Production Benders—on either a production or job basis.

Show us your problem—with drawings, if possible—and we'll show you the answer. Write PEDRICK TOOL AND MACHINE CO., 3640 N. Lawrence St., Phila. 40, Pa. Dept. 6.



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**PEDRICK production benders**

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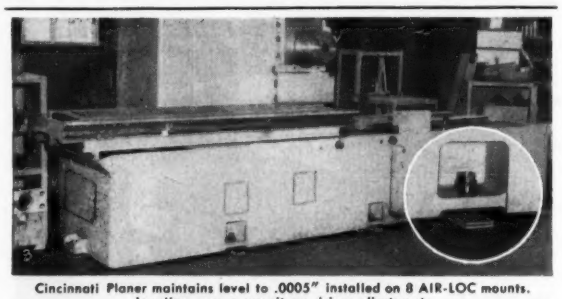

Cincinnati Planer maintains level to .0005" installed on 8 AIR-LOC mounts. Leveling screws permit precision adjustment.

## PERMANENT PRECISION MACHINE INSTALLATION (accurate to .0005") IS NOW POSSIBLE

Air-Loc 4-17-4

*Free booklet tells the whole story. Send for your copy and free samples.*

**machine mounts give you:**

1. Permanent precision leveling of lathes, grinders, etc., maintained to .0005".
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**AIR-LOC DIVISION**
CLARK, CUTLER, McDERMOTT CO., FRANKLIN, MASS.

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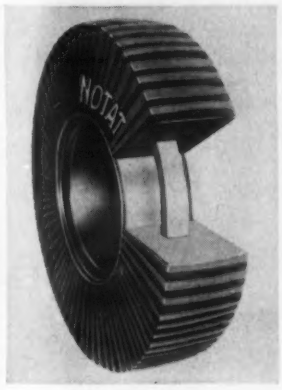
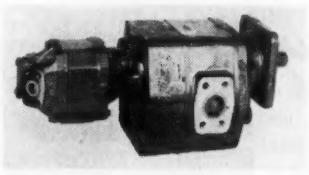
## NYLON TIRE
### withstands severe industrial use




Added to regular line of Notat vertically laminated tires is this nylon model featuring nylon laminated with soft rubber. Segments are banded together with an internal steel band under high pressure. Tire gives a soft, bounce-free ride and is unaffected by sharp, jagged stones, metal shavings, scrap metal, brick, or glass. Made by **Notat Tire Co.**, 1504 E. 34th St., Chattanooga, Tenn.

▲ For more details circle NED-614 M9 on enclosed inquiry slip ▲

## TANDEM HYDRAULIC PUMP
### two pumps mounted on common shaft



Tractors, construction machines, and other off-the-road vehicles with hydraulically powered accessories are typical applications for this tandem hydraulic pump. It consists of two hydraulic pumps on a common shaft. Larger pump is rated 60 gpm at 1800 rpm and zero pressure, and is designed to power scraper and dozer blades, cranes, or shovel buckets. Smaller 18-gpm pump powers the hydraulic steering. Assembly employs Hydroid pump impellers with an elliptical tooth form that eliminates trapping between teeth and roots. Hydroid gear design permits speeds above 4000 rpm and flows of 250 gpm in larger pumps. Made by **Hupp Aviation Co.**, 6633 W. 65th St., Chicago 38, Ill.

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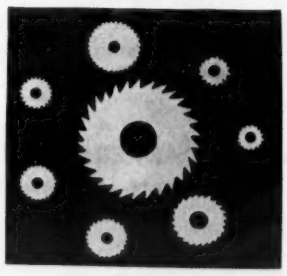
## SPECIALTY SAWS
### three undercutting, slotting types



Three types of International specialty saws offered in various sizes and thicknesses are Hi-Speed mica undercutting, Hi-Speed copper slotting, and special heavy duty slotting types. Both high speed types are hollow ground 18-4-1 tool steel and have precision milled teeth. Undercutter saws are in six diameters from 1/4 to 1/2 in. Six slotting saws range from 3/4 to 1 1/4 in. OD. The heavy duty slotting saws are available in five diameters from 3/4 to 1 1/4 in. Staggered tooth clearance provides chopping action. Available from **Auto-Test, Inc.**, 600 S. Michigan Ave., Chicago 5, Ill.

▲ For more details circle NED-616 M9 on enclosed inquiry slip ▲

## Eliminate 'high-cost specials' by standardizing on AMERICAN STOCK GEARS

Investigate and you'll probably find that instead of having to go to the added time and expense of ordering special gears, that your needs can be filled from the American line.

American is a complete stock gear line. It includes brass, bronze, steel, semi-steel, cast iron, and non-metallic gears in a range of 48 to 3 diametral pitch. Available from your nearby distributor of American Stock Gears.

**Ask for FREE copy of American Stock Gear Catalog No. 360 containing detailed information and engineering data.**

**AMERICAN STOCK GEAR division**
Perfection Gear Co., Harvey, Illinois

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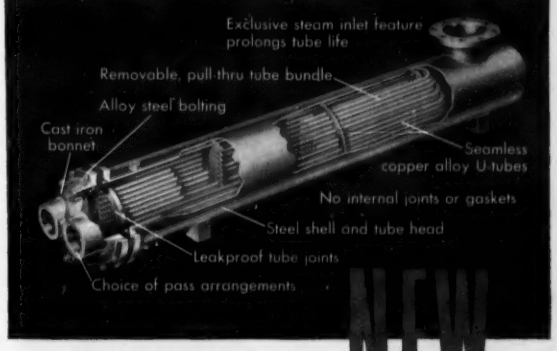
for sheer ruggedness, downright economy, top-notch performance and widespread choice




there's just no equal to NEW

# ROSS INSTANTANEOUS HEATERS

**It's a fact:** The new line of Ross Instantaneous Heaters packs more benefits than any equipment of its type ever built!

**Unsurpassed in efficiency,** it is the product of the best heat exchanger engineering brains in the business. For over 40 years, Ross Heat Exchanger (now part of American-Standard* Industrial Division) has been completely dedicated to the design and manufacture of heat transfer equipment.

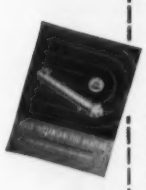
**Rock-bottom in economy,** the new line reflects the newest thinking in cost-cutting, time-saving standardization techniques.

**Rugged to the core,** it is built to ASME Code requirements and utilizes durable materials throughout.

**Broad in its range,** it provides 128 sizes (2 and 4 pass) to meet virtually every industrial, commercial and institutional water heating requirement: service water, booster, space heating convertor, radiant heating panels and snow melting equipment, swimming pools, storage towers . . . yes, even process work involving other fluids.

## NEW BULLETIN SIMPLIFIES SELECTION

Brand new, Bulletin 304.4K1 contains complete data and specifications for selecting your own unit . . . and shows you how. Mail the coupon for your copy.



To: American-Standard Industrial Division
Detroit 32, Mich.

Send your new Bulletin 304.4K1 describing Ross Type W-100 Instantaneous Heaters.

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TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

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**AMERICAN-Standard**
INDUSTRIAL DIVISION
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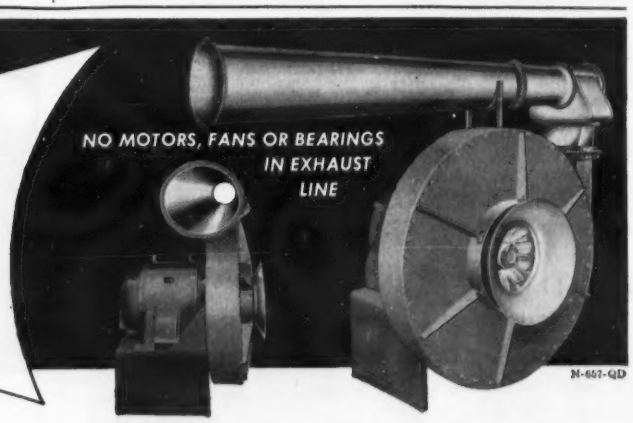
# Now . . .

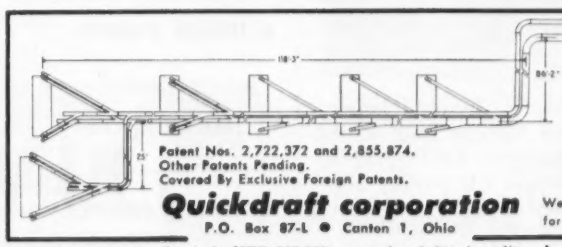
## you can reduce bulk materials handling costs with *Quickdraft* high pressure exhausters




**FOR MOVING:**
Cement, Sand, Iron Oxide, Wheat, Corn, Salt, Limestone, Castor Beans, Knots, Blocks, Paper, Wool, Cotton, Oats, Rags, Rubber, Vegetables, Coal (Powdered), Shavings, Cork, Sawdust . . . **and any other materials that can be moved by air!**

**IMPORTANT NOTICE**
For resisting abrasive action, Quickdraft units can be rubber lined. For withstanding corrosive gases, all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (PVC), and with plastic and Fiberglas coatings.

Time and maintenance savings usually pay for Quickdraft high-pressure exhausters in 6 to 18 months on materials handling jobs. Because material does not pass through blower, maintenance is negligible. Downtime for cleaning and replacing fans, motors and bearings is eliminated. Quickdraft units are also ideal for exhausting paint spray, abrasives, corrosive gases, noxious fumes and high temperatures. For Quickdraft engineering data on materials handling, industrial exhausting, heating plant venting, write today!



Patent Nos. 2,722,372 and 2,855,874. Other Patents Pending. Covered By Exclusive Foreign Patents.

**TYPICAL EXAMPLE:** Ideal for moving trim from paper, cellophane and plastic slitting machines. (Models range from 4 in. to 30 in. diameter — with 1/6 to 600 H.P. motors — with negative static pressures from 1/4 in. to 60 in. W.G.)

**Quickdraft corporation**
P.O. Box 87-L • Canton 1, Ohio

Well known for power draft units for all types of heating plants.

▲ For more details circle NED-613 M9 on enclosed inquiry slip ▲

**Why RMC external recalibration device is important to users of industrial thermometers**

To recalibrate the ordinary bimetal thermometer, you must remove the dial glass and move the pointer by hand. You will achieve the desired recalibration of course, but a number of undesirable things may also result. First of all, the instrument's air-tight seal is automatically destroyed in the removal of the dial glass. Secondly, in forcing the pointer, the pointer shaft may become bent or twisted.

Should the pointer shaft become bent even slightly, it can cause the pointer to stick due to improper alignment of the bimetallic shaft on its bearing surfaces. The obvious result, of course, will be inaccurate readings and necessary repair or replacement of the instrument. None of these things can happen with the RMC external recalibration device.

A simple dial-reset screw, located on the back side of RMC industrial thermometers, permits recalibration without opening the instrument in any way. This external recalibration feature is another first with RMC, along with true dry-air hermetic sealing.

**Write for new RMC Catalog**

Explains hermetic sealing, recalibration and dampening, as well as full line of RMC dial thermometers, specifications, etc.

**ROCHESTER MFG. CO., INC.**
114 Rockwood St., Rochester 10, N. Y.
INDUSTRIAL INSTRUMENTS

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*Wally the Witt says:*

**Here is the only can that pays you an OLD AGE PENSION!**

That's right—because when ordinary cans reach the retirement age, Witt cans are still going strong, and that's when they start paying you dividends on your investment. You'll replace ordinary cans 5 times without replacing a Witt can even once!

Witt cans are rugged, heavy duty, straight side cans built of heavy gauge steel and hot-dip galvanized after fabrication. The result is, they're leak-proof, crush-proof, practically indestructible. So take advantage of the only available can pension plan—specify Witt.

"ORIGINATORS OF THE CORRUGATED CAN" **WITT Cans**
THE WITT CORNICE CO., 4468 STEEL PLACE, CINCINNATI 9, OHIO

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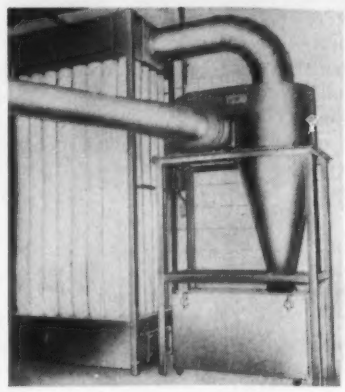
## AUXILIARY DUST FILTER
### removes high volume of fine dust



Broadened application of 3000 Series or smaller Dustkop dust collectors is possible with use of the F.T. 40 cloth tube auxiliary filter. Its 40 tubes of flame resistant material are sealed at top and bottom by a molded rubber grommet to minimize wear. A manual shaking device frees tubes of collected dust at regular intervals. Dust falls into a storage bin at the bottom. Top inlet flange can be at the sides or ends. Made by **Aget Mfg. Co.**, Adrian, Mich.

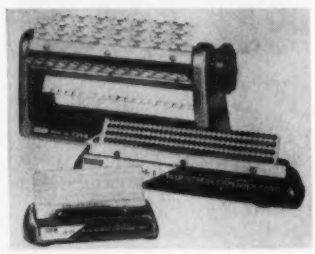
▲ For more details circle NED-621 M9 on enclosed inquiry slip ▲

## AUTOMATIC FIRE ALARM
### self-pressurized Freon gas unit

When temperature reaches the operating point of this self-pressurized Freon gas type fire alarm, pressure is released to activate a signal horn located inside or outside the building. Unit is UL-approved for use with 1500 ft of tubing in a single one-horn system, or for two horns in one system. Sound of blast lasts for 15 to 20 min and can be heard for ¾ mile. Units are offered in fixed temperature ratings of 136 and 174° F. These are placed where ceiling temperatures do not exceed 100 and 150° F, respectively. Alarms are designed for 400 sq ft spacing, and as many units as required can be interconnected with ¼-in. aluminum tubing. Made by **Standard Fire Alarm & Signal Inc.**, 100 Old York Rd., Jenkintown, Pa.

▲ For more details circle NED-622 M9 on enclosed inquiry slip ▲

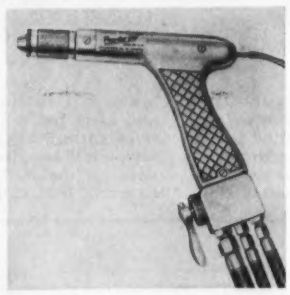
## WIRE MARKER DISPENSERS
### for self-sticking markers, masks



Production line marking of wires, harnesses, motor leads, and other electrical equipment is speeded by these card holders for self-sticking marking and masking products mounted on Blue Streak dispenser cards. Model CH-1 holds one 9-in. long card or two 4½-in. long cards of markers or precut masks. Model CH-05 holds one 5-in. long card of Micro Marker wire markers used on very small wires and subminiature assemblies. Model CH-4 holds up to four cards and as many as 360 different precut, individually dispensed markers. Made by **W. H. Brady Co.**, 727 W. Glendale Ave., Milwaukee 9, Wis.

▲ For more details circle NED-623 M9 on enclosed inquiry slip ▲

## METALLIZING GUNS
### vacuum fed, spray from any angle



Vacuum feed, produced by movement of gases through the gun, enables Powder - Jet metallizing guns to spray powder from any angle. Lever controlled Model CA-30 operates with compressed air for all hard-facing and sprayable metal powders. Model AL-20 operates without air and sprays high-temperature ceramic powders. Separate hopper has built-in 110-v vibrator, and built-in filter screen prevents clogging of hose or hopper. An all-purpose combination unit of both guns and the powder hopper is obtainable. Made by **Metallizing Co. of America**, 3520 W. Carroll Ave., Chicago 24, Ill.

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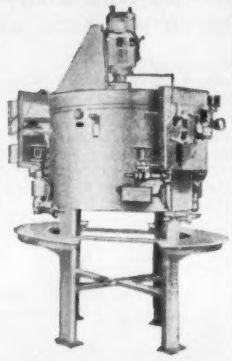
**KETTLES AND JACKETS**
*Faster Heating and Cooling . . . Longer Life*

- 5 Gallon to 325 Gallon Capacity Kettles for Waxes, Oils, Resins, Salts, Asphalts.
- TRENT "Folded-and-Formed" Heating Elements in Metal Inner Liner.
- Complete Temperature Control to Prevent Overheating, Scorching, Hot Spotting.
- Jackets for Retorts, Reactors and Autoclaves.



- High Temperature Uniformity to 2000°F.
- Compact, Space Saving Design.
- Low Thermal Inertia—High Dielectrical Strength (600V).
- Economical Installation and Maintenance.

WRITE FOR BULLETIN 72-TE

**TRENT INC.**
Electrically Heated Industrial Equipment
251 LEVERINGTON AVE., PHILADELPHIA 27, PA.
In Canada Supreme Power Supplies Limited, Toronto 14

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Lightweight yet ***VIRTUALLY INDESTRUCTIBLE***

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NEW J&J HIGH DENSITY, POLYETHYLENE

**TOTE BOX**
BY GREX

. . . the lightweight, inexpensive replacement for cost-heavy metal tote boxes . . . hold big loads without bending or twisting . . . easy to lift with wide, roll-over edges . . . cross stack securely or nest conveniently when not in use . . . will not shatter under heavy impact . . . resist steam cleaning or freezing temperatures . . . withstand oils, greases, acids, chemicals, strong detergents. Size: 21" x 15½", inside depth, 5½". Color: Coffee brown.

*Nationally Distributed Through Quality Dealers*

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*Sales Representatives In Leading Cities Throughout The Country*
PALMER, MASSACHUSETTS
*In Canada:* Jarvis & Jarvis of Canada, 1744 William St., Montreal, Que.

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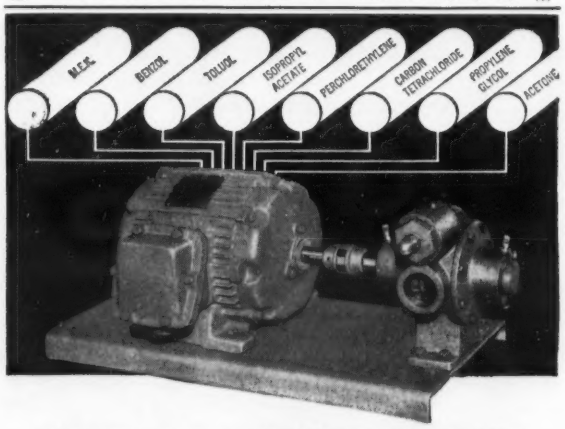


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- TRUCK PUMPS
- BULK PUMPS
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If you're transferring or dispensing solvents, you'll move them more safely and efficiently with Blackmer bulk, truck, or hand pumps designed specifically to handle these types of liquids. Write for Bulletins 110, 200, and 310.

*"liquid materials handling"® equipment*

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BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICH.
*See Yellow pages for your local sales representative*

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# COMMANDER TAPPERS

## a Type and Size for Every Job!

Commander Tappers are made in 10 models—each designed to handle tapping jobs over a wide range. From the Commander Tapper line, you can select the right unit to give you the exact performance your job requires. Whichever Commander Tapper you select, you will get unequalled performance and tapping economy. Sold and serviced by drilling and tapping specialists. Write for the Commander Production Tool Catalog and name of nearest Distributor.

101

**Commander MFG. CO.**
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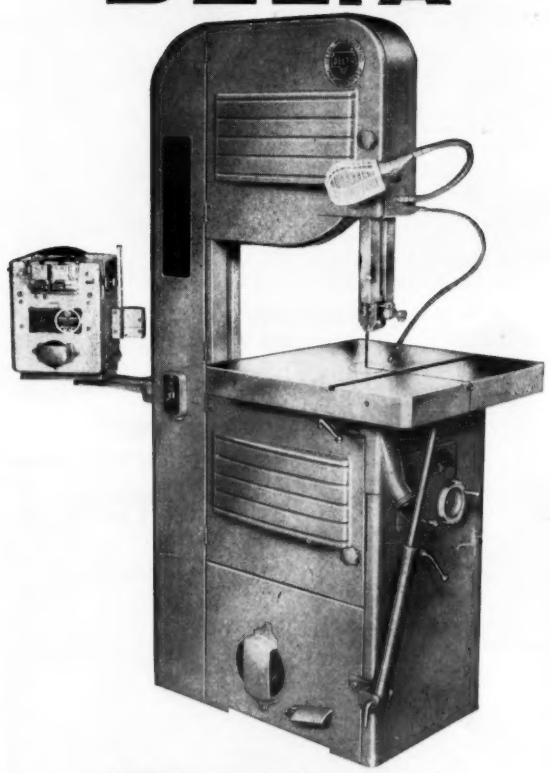
# NEW from DELTA



## 20" metal-wood
*Variable Speed*
## BAND SAW

Now you can have the Band Saw features you said you wanted most—*and for less than $900!* This all-new Delta Band Saw (shown with optional blade welder) gives *greater accuracy, better cutting performance* with:

**WIDE RANGE VARIABLE SPEED DRIVE**—50 to 4500 FPM—cuts stainless steel, aluminum, wood, plastics.

**SCIENTIFICALLY DESIGNED BLADE GUIDES**—give maximum blade support for heavy metal cutting.

**RUGGED FRAME CONSTRUCTION**—massive, rigid internal frame with modern fabricated exterior.

**SEE IT AT YOUR NEAREST DELTA DEALER**—he's listed under "TOOLS" in the Yellow Pages—or write: Rockwell Manufacturing Company, Delta Power Tool Division, 626M N. Lexington Ave., Pittsburgh 8, Pa.

DELTA INDUSTRIAL TOOLS
another fine product by
**ROCKWELL**

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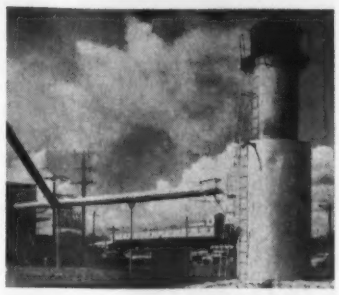
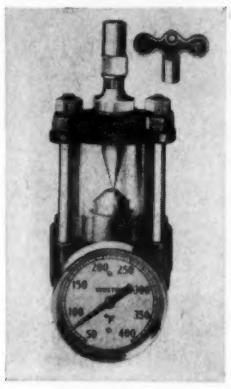
## WASTE INCINERATOR
### smoke, fly ash, sparks eliminated



Complete combustion of waste materials without smoke, fly ash, sparks, ashes, or dust is achieved by the Burn-rite incinerator. Materials are blown directly into the incinerator with a blow pipe system. Water cooling prevents jacket from reaching temperatures above 212° F. It can be shipped assembled for field installation in sizes up to 11 ft diameter. Sand in the waste material is extracted before it has been in the heat long enough to form clinkers. The 11-ft diameter unit shown burns waste wood at rate of 4500 lb per hour. Made by **Jacksonville Blow Pipe Co.**, Box 3687, Jacksonville, Fla.

▲ For more details circle NED-630 M9 on enclosed inquiry slip ▲

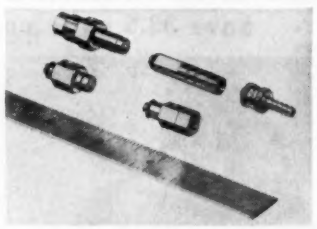
## CONDENSATE FLOW REGULATOR
### is replacement for steam traps



Essentially an adjustable needle valve encased in a sight glass, Series 300 micro adjustable orifice will replace steam traps for drainage of heating and processing units operating at up to 60 psi pressures. Condensate is drained immediately. Visual check on flow of condensate and steam temperature can be made through sight glass and optional dial thermometer. Scale and other impurities are flushed through the orifice by opening the valve. Pipe sizes from ½ to 1 in. are made by **Stickle Steam Specialties Co.**, 2215 Valley Ave., Indianapolis 18, Ind.

▲ For more details circle NED-631 M9 on enclosed inquiry slip ▲

## AIR & OIL CONTROLS
### four types in miniature line



Minimatic line of miniature air-oil control devices includes the Model MFC-1 flow control (upper left), a 1½-in. long unit for controlled flow in one direction and full flow return at 0 to 250 psi. Air flow rate at 50 psi is 0 to 3.6 cfm. Model MNV-1 needle valve (lower left) has a 0 to 2.6 cfm flow rate at 50 psi. It is 15/16 in. long and has a 0 to 2000-psi controlled flow in either direction. The 1 5/16-in. long MQC-V check unit and 1-in. MQC-F hose connection at upper right have a working pressure of 0 to 150 psi. Air flow rate is 2.7 cfm at 50 psi. At lower right is the 1 in. long MCV-1 check valve which opens under 1 psi and holds 0 to 2000 psi. Air flow rate is 3.5 cfm at 50 psi. Made by **Clippard Instrument Laboratory, Inc.**, 7390 Colerain Rd., Cincinnati 37, Ohio.

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## PUNCH PRESS
### 15-ton unit for short run work

Single station 15-ton capacity Punch-Master press for short run piercing of sheet metal is designed for fast punch and die changing. Holes up to 3½ in. diameter can be pierced in work up to 24 x 28 in. in a single handling. Work is located with either the Wiedemann pantograph follower gage employing a template, or dimensional stops on a built-in graduated rack. After securing template onto work table, operator inserts desired punch and die, clamps metal on movable cross slide, and punches all openings required with that tool. Press does not trip until movable stylus is engaged in desired template hole. Made by **Wiedemann Machine Co.**, Dept. 321, Gulph Road, King of Prussia, Pa.

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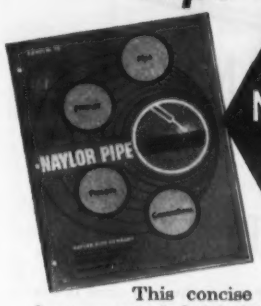
# Helps Answer Pipe Problems!

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**NAYLOR CATALOG**
Offers Data on Pipe and Fittings

This concise catalog presents helpful data on NAYLOR pipe, fittings and connections for use on large diameter pipe applications. Includes standard specifications on pipe sizes from 4" to 30" in diameter—in steel, alloys and stainless steel.

Ask for Condensed Catalog No. 59.

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- Air lines
- Compressed air lines
- Gas lines
- Ventilating lines
- Process lines
- Pneumatic conveyors
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**NAYLOR PIPE Company**
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60 East 42nd Street, New York 17, N. Y.

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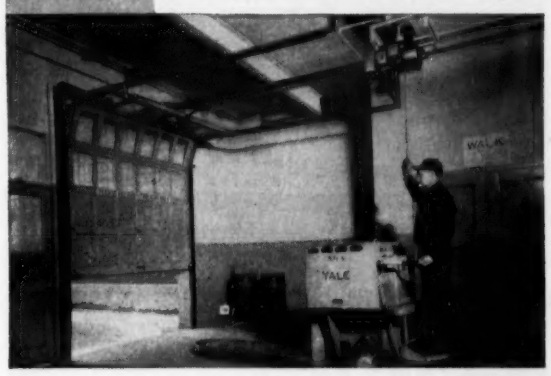
THE MARK OF QUALITY
BARBER COLMAN

## DOOR OPERATORS
**Pull switch saves man-hours and heat**



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Open-door time is minimized, traffic kept moving. Also available with radio control installed on trucks. New booklet and computation show *how much* Barcol features save. Barber-Colman makes operators for overhead, swinging or sliding doors, and sliding gates. Your Barcol distributor sells, installs, guarantees, and services—look under "Doors" in phone book.

See catalog 7c/8a Sweet's Plant Engineering File.

**BARBER-COLMAN COMPANY**
Dept. S-912 ROCKFORD, ILLINOIS

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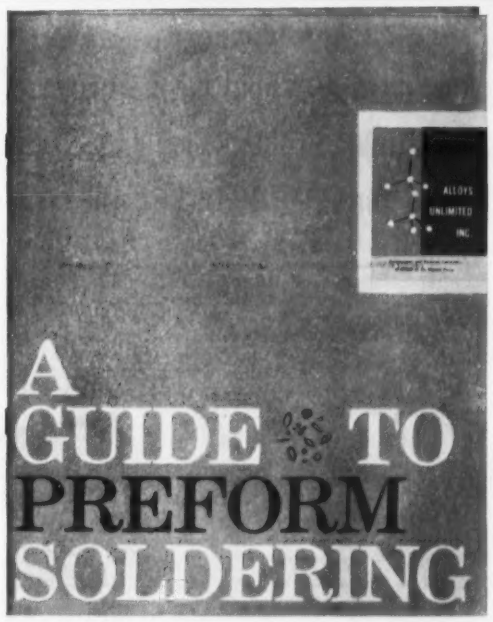


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*for designers and engineers*

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Here for the first time is the complete story on how leading industries handle their most exacting speed control problems with today's most versatile mechanical traction-type variable speed drive—the Cleveland Speed Variator.

This unique drive provides infinitely variable, stepless speeds up to 9:1 (from ⅛ to 3 times input speed). Precise adjustment gives instant, smooth speed changes either by manual, automatic, or remote control. Write for your copy of this informative Bulletin K-250, today.

**THE CLEVELAND WORM & GEAR COMPANY**
*Speed Variator Division*
3283 East 80th Street, Cleveland 4, Ohio
A subsidiary of Eaton Manufacturing Company

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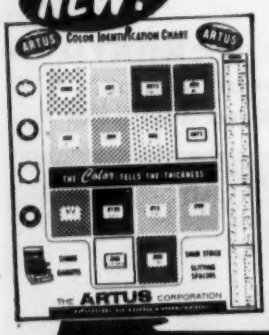
NEW!

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ARTUS

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Custom shapes to your specifications.

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Condensers choked with scale or slime? Pipes clogged? Coils heavy with deposits? Whether it's air-conditioning or refrigeration systems, boilers or heating systems, "Virginia" can help you solve the problem of water treatment. Get your copy of "Water Cooling Problems—How to Correct Them." Learn what new chemicals are available, how easily they can be used, how effective they are. They are stocked by wholesalers everywhere. Or ask to have a trained "Virginia" man call on you to discuss your problem.

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141 Jefferson St., West Norfolk, Va.

☐ Send me a copy of "Water Cooling Problems—How to Correct Them."
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Name_____ Title_____
Company_____
Address_____

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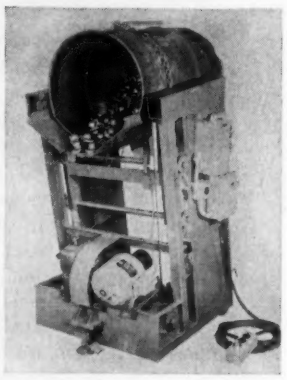
## STORAGE RACKS
### in 6-20 ft heights, 2-6 ft depths

Rigid, self-supporting storage racks in heights from 6 to 20 ft and in depths from 2 to 6 ft are assembled without tools from prefabricated Speedrack upright trusses and adjustable load beams. Rapid assembly is made possible by U-shaped locking connector which holds every joint rigid against stresses. Load beams are offered in many widths and can be installed at any point along uprights. Made by **Storage Products Corp.**, 4418 Oakton St., Skokie, Ill.

▲ For more details circle **NED-640 M9** on enclosed inquiry slip ▲

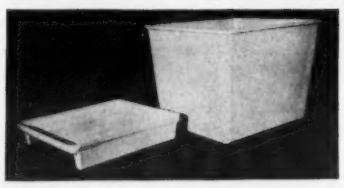
## BARREL DUMPER
### electric unit has inching control



Barrels and drums weighing up to 2000 lb are elevated and dumped by this portable electric device, equipped with automatic and inching controls. It also has a remote control station. Containers of machine parts, acids, oils, and other chemicals and supplies are easily handled. Dumping height at maximum tilt is 40 in. Drums from 18-in. diameter up to standard 55-gal size ride a tipple-like frame, equipped with an extended discharge trough. Unit is caster mounted and has a floor lock. Made by **Jarke Mfg. Co.**, 6333 W. Howard St., Chicago 48, Ill.

▲ For more details circle **NED-641 M9** on enclosed inquiry slip ▲

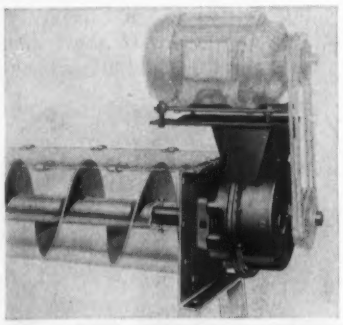
## MATERIAL HANDLING BINS
### have 33.5 cu ft capacity



Fiberglas-reinforced plastic bins for in-plant material handling have capacities up to 3000 lb. They consist of a resilient, impact resistant plastic body with a separate, bonded-on base (see photo). The whole unit rests on four neoprene rubber foot pads on 5, 7½, or 9½-in. legs. Bins have a smooth interior surface, are water and moisture resistant, and are equipped with a drain hole and plug. They can be steam cleaned at atmospheric pressures. The containers are handled by fork or platform lift trucks or hoist lift bars. They measure 48 x 41½ x 36 in., have a 33.5 cu ft or 260-gal capacity, and weigh only 130 lb when empty. Made by **Goodyear Aircraft Corp.**, 1210 Massillon Rd., Akron 15, Ohio.

▲ For more details circle **NED-642 M9** on enclosed inquiry slip ▲

## SCREW CONVEYOR DRIVE
### six sizes have four ratios each



Basic helical gear drive for screw conveyor installations can be combined with a standard trough end and a Falk motor mount. The compact drive is made in six sizes, each with ratios of 4:1, 9:1, 14:1, and 24:1, for conveyors requiring ½ to 30 hp. Drive shafts are easily removed. Tapered roller bearings absorb thrust from the screw conveyor. Trough ends are available in eight sizes from 6 to 20 in. for bolting to any standard trough, as are seals for use between the conveyor and reducer. Predrilled steel motor mount accommodates any NEMA foot-mounted motor within the reducer capacity. Made by **Falk Corp.**, Dept. 255, Box 492, Milwaukee 1, Wis.

▲ For more details circle **NED-643 M9** on enclosed inquiry slip ▲

**in just this much stock room space**
(and at important savings in dollars, too!)

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**MANHEIM**
**Manufacturing & Belting Company**
**Manheim 4, Penna.**

Veelos is known as Veelink outside U.S.A.

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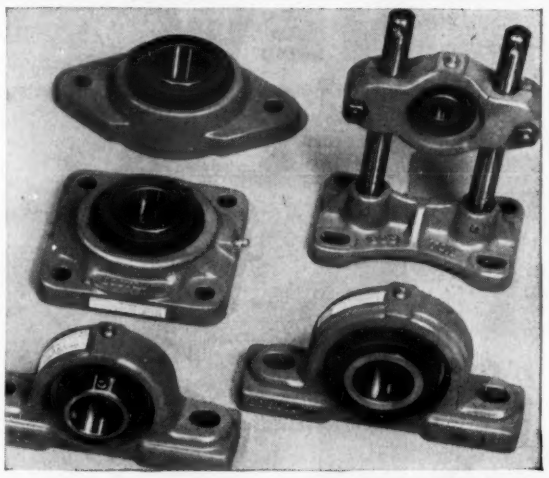

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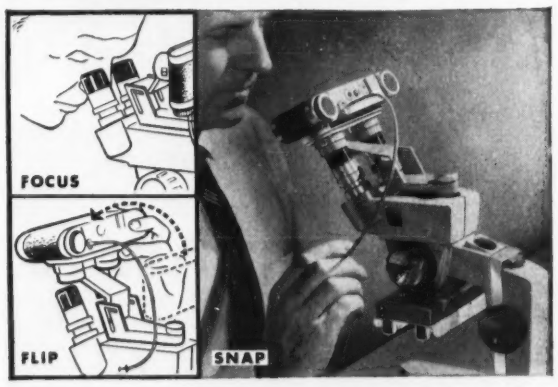


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This new Stereocamera-Viewer outfit provides everything needed to photograph a magnified specimen image in life-like three-dimension. Included are a 35mm Graflex Stereocamera, an adapter-mounting unit with special compensating prisms and a full-size Graflex Stereoviewer. Designed exclusively for use with the AO Spencer Cycloptic Stereoscopic Microscope, the camera and adapter mount quickly and easily.

**FOCUS** the specimen sharply, **FLIP** the mounted 35mm Stereocamera into position over eyepieces and **SNAP** the magnified 3-D image. That's all there is to it. Camera swings back, out of the way, until you are ready for the next photo. With the Stereoviewer you can review your findings anytime . . . anywhere. This easy-to-use 3-D photomicrographic package available only from American Optical.

**American Optical Company**
SPENCER Instrument Division • Buffalo 15, New York

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Manufactured by
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Here's a new line of RATCHET-HOISTS backed by the reliable name of BEEBE BROS. • Superior to anything on the market • Simplified design with fewer parts • Extra strength from oversize steel shafts • Cable wind-up handles standard on all models • Triple-hook system standard on all models • Safety handles • Design tested for overload • Warranted 1 year against defective parts.

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*Specify* **Hartford** PRECISION BALLS • BEARINGS

**Hartford Steel Ball Co.**
**82 Jefferson Avenue, W. Hartford 6, Conn.**

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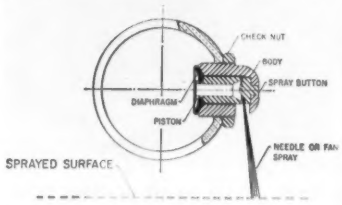
## DRILL-SCREWDRIVER
### 3/8-in. electric tool is reversible

Twist drills up to 3/8 in., wood augers to 3/4 in., masonry bits up to 1/2 in., and hole saws from 5/8 to 1 3/4 in. can be used in the double-purpose Scru - Drill, a combination electric drill and power screwdriver. Turning its spindle collar converts it to a tool with a screwdriving clutch. The screwdriving bit idles for finding the screw-head slot, then forward pressure engages the mechanism and drives the screw. Release of driving pressure disengages the clutch when the screw is properly seated. Tool can also be used with shanks and sockets for running up nuts. A reversing switch permits quick removal of screws or nuts. Made by **Black & Decker Mfg. Co.**, 762 E. Pennsylvania Ave., Towson 4, Md.

▲ For more details circle NED-649 M9 on enclosed inquiry slip ▲

## SELF-CLEANING SHOWER
### offered in various spray patterns

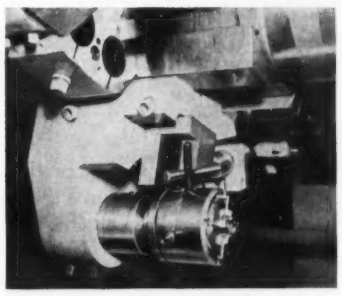
Average size particles lodged in the nozzle of the Lodding self-cleaning shower causes its piston to oscillate automatically during operation to free the obstruction.




Large plugs are released quickly by closing the water valve in the shower pipe, causing the piston to retract. Nozzles are mounted on a tangent, instead of at the bottom where foreign matter collects, extending into the pipe to preclude entry of scale, metal, or chips. Effective spray distance starts at 4 to 4 1/2 in. Various patterns from needle to 80-degree fan are available for use in head boxes, Fourdrinier wires, washers, screens, filters, and other equipment. Brass or stainless steel nozzle requires 50 psi for clarified white water use and 30 psi for fresh water. Made by **Lodding Engineering Corp.**, Auburn, Mass.

▲ For more details circle NED-650 M9 on enclosed inquiry slip ▲

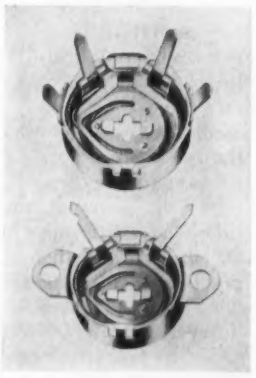
## DIE HEAD RESETTER
### for single spindle bar automatics



Die heads in diameters to 7 1/2 in. can be reset automatically during operation of Model 2AB single spindle bar automatics by this hydraulic mechanism. It is powered by oil from the main reservoir of the machine through a "spider" distributor (for both coolant and hydraulic oil) mounted on the back of the pentagon turret. The reset mechanism operates automatically during opening and closing of the machine's hydraulically actuated collet chuck. It will reset Landis, Geometric, and National Acme die heads. Made by **Warner & Swasey Co.**, 5701 Carnegie Ave., Cleveland 3, Ohio.

▲ For more details circle NED-651 M9 on enclosed inquiry slip ▲

## MINIATURE RESISTORS
### low cost, preset, variable type



Resistance range of 1/2 to 5000 ohms is available in low cost, preset miniature wirewound variable resistors. Alloy spring contacts make positive contact with the resistance winding at every point of rotation. They have 2 to 8-oz-in. rotational torque, stop torque of 12 lb-in. minimum, and a 240-degree angle of rotation. Type 110 has straight or snap-in mounting tabs and terminals for printed circuits. Type 112 has flange type cover for eyelet or rivet mounting. Made by **Chicago Telephone Supply Corp.**, 1210 W. Beardsley Ave., Elkhart, Ind.

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**NOW... BIL-JAX ALL-PURPOSE SCAFFOLD OFFERED IN BOTH... TUBULAR STEEL AND ALUMINUM**

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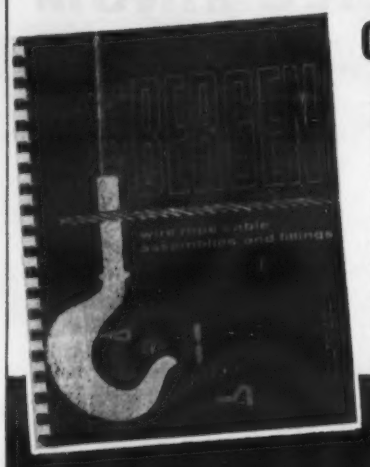
SEND FOR

# cable assembly design catalog



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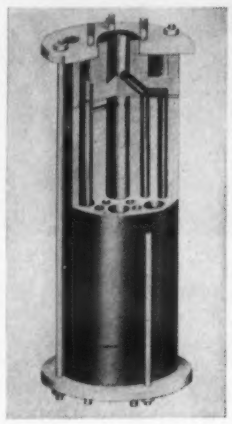
502 GREGG STREET, LODI, N. J.

For more details circle NED-656 M9 on enclosed inquiry slip

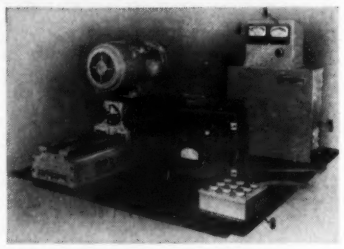
## GRAPHITE HEAT EXCHANGER
### heating, cooling media are separate



Limited volume heating or cooling requirements, such as encountered in the plating industry, are met by the Paralel Exchanger which employs a single monolithic piece of graphite for the heat transfer cylinder. Both heating and cooling passages are drilled parallel to each other. Corrosives contact only the impervious graphite, which has a high rate of thermal conductivity. Temperatures to 340° F can be accommodated at hydrostatic pressures to 75 psi; steam, to 50 psi. Unusual header domes at each end keep the two media separated from each other, thus eliminating side piping connections. Made by **Falls Industries, Inc.**, Aurora Road, Solon, Ohio.

For more details circle NED-659 M9 on enclosed inquiry slip

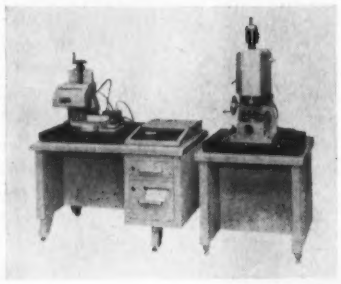
## DEEP HOLE DRILL
### machine consists of six components



Six "building block" components of this packaged deep hole drilling machine enable the purchaser to assemble it on his own base to fit any job. The precision machine is capable of gun drilling or boring "finished" holes in one pass from the solid. Setup consists of the Boremation deep hole drilling power unit, spindle load meter, feed rate meter, spindle tachometer, electrical control cabinet, and control panel. Infinitely variable feeds from 0.0001 to 0.025 in. per revolution and speeds up to 10,000 rpm can be dialed. Mechanical models have strokes up to 60 in. and hydraulic models have up to 24-in. strokes. Made by **Drillmation Co.**, 6500 E. 11 Mile Rd., Center Line, Mich.

For more details circle NED-660 M9 on enclosed inquiry slip

## SURFACE ROUGHNESS RECORDER
### charts shape, height, and spacing



Tracer, Pilotor, and Amplicorder are the three basic units of the Rotary Proficorder, a mechanical-electronic instrument which produces a permanent magnified chart of all surface irregularities. Shape, height, and spacing of pits, flaws, waves, roundness, waviness, roughness, and total profiles are recorded. Accuracy is within 0.000003 in. Tracing range is 1/32 to 8 in. OD and 1/8 to 8 in. ID. Made by **Micrometrical Mfg. Co.**, 345 S. Main St., Ann Arbor, Mich.

For more details circle NED-661 M9 on enclosed inquiry slip

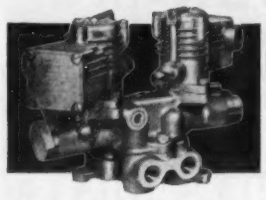
## ULTRASONIC GENERATORS
### 500 and 750-w solid-state units

Ability to start instantly without warm-up and to adjust output frequency semiautomatically to match changing load requirements result from the use of solid-state components in these ultrasonic cleaning unit generators. Redesign without tubes or transformers has reduced their weight up to 80 per cent and their size as much as 50 per cent. In production are 500 and 750-w units, with 1000 and 2000-w units scheduled. They will energize transducers from 18,000 to 22,000 cycles in 1½ to 16-gal cleaning tanks. Photo shows comparative size of the old and new 2000-w units, along with parts eliminated by the new design. Made by **Westinghouse Electric Corp.**, Industrial Electronics Dept., 2519 Wilkins Ave., Baltimore 3, Md.

For more details circle NED-662 M9 on enclosed inquiry slip

no coil burnout with

# SPEED KING®



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For more details circle NED-663 M9 on enclosed inquiry slip

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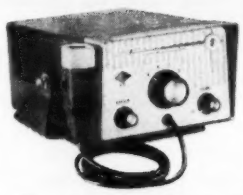

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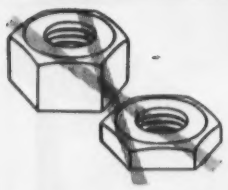

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In Canada: P. L. Robertson Co., Ltd., Milton, Ont.

PALNUT® LOCK NUTS FASTENERS

*Quick, secure fastening at low cost*

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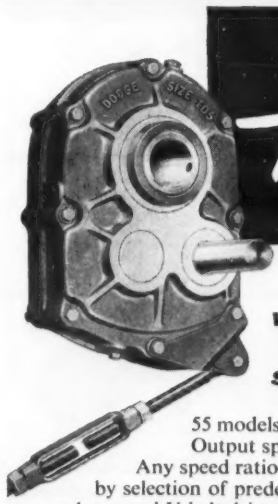

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55 models! Capacities up to 170 hp. Output speeds from 10 to 378 rpm. Any speed ratio up to 150 to 1 obtainable by selection of predetermined combination of reducer and V-belt drive. Torque-Arm is noted for its great ruggedness (semisteel housing), its high quality heat treated, helical steel gears, its very high efficiency, its cost saving characteristics. Ask your Dodge Distributor or write for bulletin.

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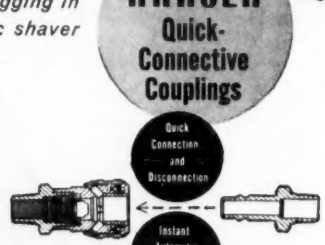


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*Beck Strippers outstrip all others — removing organic finishes, epoxies, etc., as easily as baked enamels, lacquers, etc. No stripping scum — clean rinsing!*

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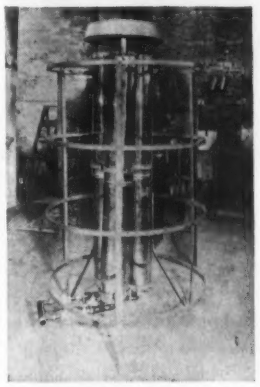
**BECK EQUIPMENT COMPANY**
3350 WEST 137th STREET — CLEVELAND 11, OHIO

▲ For more details circle NED-668 M9 on enclosed inquiry slip ▲


## PORTABLE GAS HEATER for hard-to-heat areas

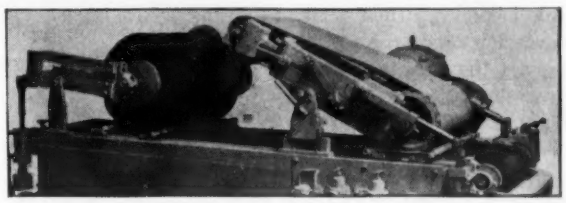


Occupying only a small floor area, the Red Rocket down beam portable gas heater quickly warms surrounding air with odorless heat for personnel comfort. It is easily installed, operating on any type of gas at pressures from 6 oz to 2 lb. Heating tubes are stainless steel. The 72-in. high single, double, and triple stack space heaters have 160,000, 320,000, and 480,000-Btu per hour ratings. Made by **Union Chill Mat Co.**, Saxonburg, Pa.

▲ For more details circle NED-669 M9 on enclosed inquiry slip ▲

## METAL POLISHING MACHINE has abrasive belt and wheel

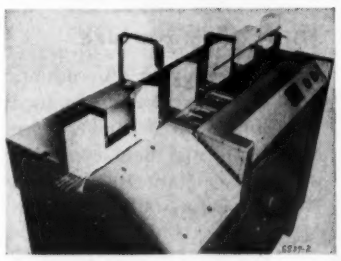
This dual head Speedbrite metal polishing machine incorporates a wide abrasive belt head and a 3M Scotch-Brite wheel. Metal sheets, flat stampings or extrusions,



and strip stock are fed onto a continuous conveyor belt that passes under both heads. Forward mounted belt sanding head has a floating action that can be adjusted for fine tolerance stock removal. It removes scratches and scars in the metal surface, whereas rear mounted wheel does the polishing. Oscillating of wheel head prevents marking the work. Unit is available in 12 and 18-in. widths from **Timesaver Sanders**, Box 7446, Robbinsdale Station, Minneapolis 22, Minn.

▲ For more details circle NED-670 M9 on enclosed inquiry slip ▲

## SEGREGATION CHECKWEIGHER checks 350 containers per minute

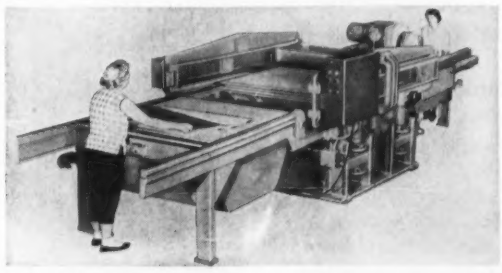


Any combination of overfilled, underfilled, and acceptable packages is rejected or passed by this two-way segregation model checkweigher. It checkweighs up to 350 sealed containers per minute. Individual tension adjustments set scale for each package size to detect variances of ¼ per cent of total package weight. Unacceptable weights are diverted down a chute. Unit handles virtually any semi-rigid container with one flat surface ranging in size from 1½ x 1½ to 10 x 10 in. Made by **Food Machinery & Chemical Corp.**, FMC Packaging Machinery Div., 4992 Summerdale Ave., Philadelphia 24, Pa.

▲ For more details circle NED-671 M9 on enclosed inquiry slip ▲

## ROLLER DIE CUTTERS twin die handlers double production

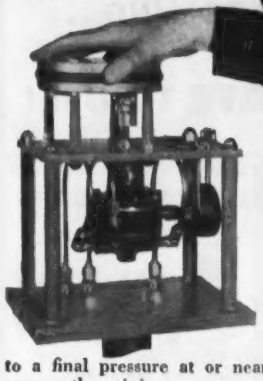
Uninterrupted die cutting of sponge rubber, urethane and vinyl foam, cork rubber, gasket materials, abrasive papers, vacuum formed plastics, and fabrics is possible



on Model 11327 automatic roller die cutter. While one of its twin die handlers is being loaded or unloaded, the other is cutting. Two different jobs can be die-cut at one time. Die cutting area is 4300 sq in. Each horizontal die handler has usable area 50 in. wide and 45 in. deep. Machine cycles up to six times a minute. Made by **Falls Engineering & Machine Co.**, 1734 Front St., Cuyahoga Falls, Ohio.

▲ For more details circle NED-672 M9 on enclosed inquiry slip ▲


**ARCCO-Anubis CONTINUOUS GAS SAMPLER**



MEETING THE DEMAND for more accurate gas sampling, this newly perfected ARCCO-Anubis instrument replaces inadequate, inaccurate spot sampling methods. The Model 100-7 will over a period of seven days accumulate at a constant rate a sample of gas to a final pressure at or near 100 psig from a sample source, the minimum pressure of which is not less than 125 psig.

The ARCCO-Anubis design is based on the principle that maintenance of a constant rate of increase in gas pressure within a closed container, from zero to any selected maximum pressure, will result in a continuous rate of flow of gas into the closed container.

This is accomplished by means of a specially designed regulation system equipped with a precision drive mechanism so as to obtain a constant predetermined rate of increase in the outlet pressure into the sample container.

Send for Bulletin No. 112-R1

AVAILABLE FOR EARLY DELIVERY

**AMERICAN RECORDING CHART CO.**
7142 East Condor Street, Los Angeles 22, California

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***thanks to* XEROGRAPHY...**

# A Stock-Print System Saves You Up to $50,000 Yearly

You can save $50,000 or more a year by installing a stock-print system of engineering drawings. Cutler-Hammer Inc. of Milwaukee is achieving such an economy. So is Arma division, American Bosch Arma Corporation, Garden City, N. Y.

A stock-print system is a streamlined library of engineering drawings commonly in use. The library is unattended. Anyone who wants a drawing helps himself. There are no requisition forms, no waiting, no refiling. Prints are so inexpensive that engineers are urged to discard them after use.

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There is a wide range of XeroX® copying equipment for setting up an efficient stock-print system. Your reproduction needs determine the xerographic model best suited to you. All models—besides preparing offset paper masters—make copies on plain, unsensitized paper or translucent vellum for diazo-type reproduction.

All models—whether manual or automatic—enlarge, reduce, or copy size to size. They offer the fastest, most versatile, most economical way to get sharp, clear copies from original documents of all kinds or from microfilm.

*WRITE* for proof-of-performance folders showing how companies of all sizes are speeding paperwork duplicating and saving thousands of dollars yearly by xerography.

**HALOID XEROX INC.**
59-215X Haloid St., Rochester 3, N. Y.
BRANCH OFFICES IN PRINCIPAL U. S. AND CANADIAN CITIES
Overseas: Rank-Xerox Limited, London, Eng.

**HALOID XEROX**

▲ For more details circle NED-674 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-675 M9 on enclosed inquiry slip ▲

*Just a single stroke!...*

CUTS ROUND RODS 1/8" to 7/8" on a

**MARVEL ROD CUTTER**

*Available in three models:*

| | | | | | |
|---|---|---|---|---|---|
| No. 5 | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 |
| No. 6 | 3/8 | 7/16 | 1/2 | 9/16 | 5/8 |
| No. 7 | 3/8 | 1/2 | 5/8 | 3/4 | 7/8 |

These are bench models, but the No. 7 MARVEL Rod Cutter can be furnished mounted on legs. See your Industrial Distributor or write us for literature and prices.

**ARMSTRONG-BLUM MFG. CO.**
5700 W. Bloomingdale Ave. • Chicago 39, U.S.A.
*Manufacturers of the outstanding MARVEL Metal Saws.*

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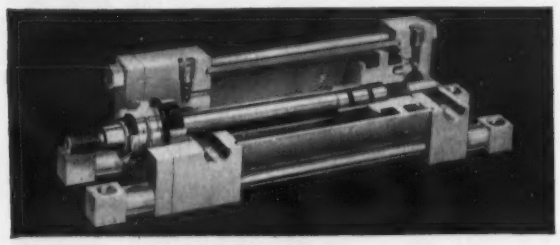

**NEW! SCHRADER SQUARE-END CYLINDERS**

meet and exceed **JIC** specs.....
250 psi air.....750 psi hydraulic

New Schrader Square-End cylinders give you compact, versatile, straight-line power. Use these double-acting cylinders for holding, positioning, moving work. Use them to push, pull or lift. Use them to automate manual operations.

In five sizes up to 4-inch bore, with four interchangeable mountings. This new Cylinder series will mount five ways: bolt, leg, flush, side-flush and base. Available cushioned or non-cushioned.

*Write for your FREE copy* of new JIC Cylinder catalog insert. Complete stocks are now available locally, plus expert help with your air control hookups.

Schrader® a division of SCOVILL

**A. SCHRADER'S SON**
*Division of Scovill Manufacturing Co.*
459 Vanderbilt Ave., Brooklyn 38, N.Y.
QUALITY AIR CONTROL PRODUCTS

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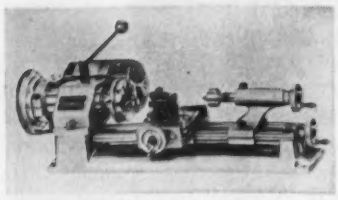
## MULTIPURPOSE MACHINE TOOL for making replacement parts



The Unimat, a compact, versatile machine tool for making emergency repairs, or manufacturing replacement parts for equipment, combines in itself a lathe, drill, press, tool and surface grinder, and a polisher. The 16-in. long machine is furnished with attachments which convert it to a vertical miller, jig saw, bench saw, threader, or gear indexing and dividing machine. A flexible shaft, collet chucks, live center, independent four-jawed chuck, cross slide clamping vise and steady rest, as well as attachments for wood turning are among available accessories. Belt drive provides speeds from 255 to 4000 rpm. Tolerances up to 0.0005 in. are possible. Offered by **Chicago Apparatus Co.**, 1735 N. Ashland Ave., Chicago 22, Ill.

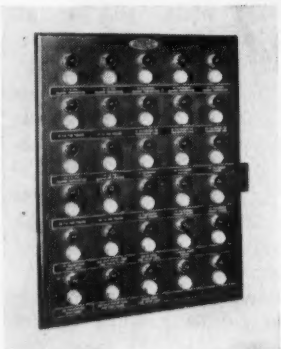
▲ For more details circle NED-678 M9 on enclosed inquiry slip ▲

## AUTOMATIC DOCK BOARD adjusts itself to proper level

An incoming truck contacts and depresses the operator arms of the free-floating Auto-Mechanical dockboard, causing it to rise automatically 16 in. from normal cross-traffic position. It then lowers itself until it rests on the horizontal plane of the truck bed. The board supports 20,000 lb in both working and cross-traffic positions and requires a 24-in. deep pit. When the truck pulls out, the board automatically returns to a cross-traffic position. The dock will not rise when a truck backs into its operating arms if an employee, fork truck, or overhead door rests on its surface. Made by **Auto-Mechanical Dock Board, Inc.**, 500 N. Stanwood Rd., Columbus 9, Ohio.

▲ For more details circle NED-679 M9 on enclosed inquiry slip ▲

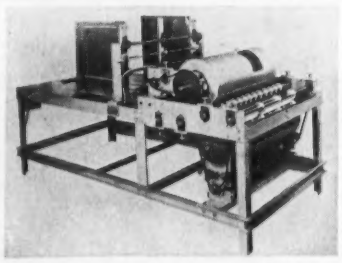
## ANNUNCIATOR incorporates "fail-safe" feature



Ability to differentiate instantly between its own component failure and an off-normal field condition in the plant is built into the Series 50FS annunciator. It has two lamps per annunciator point; a red alarm lamp indicates field abnormality, and a white lamp signals annunciator component failure and doubles as a running lamp during such failure. It also provides the flexibility of optional lock-in, remote alarm, and auxiliary contacts, a flashing alert signal signifying field abnormalities, and a trouble lamp test feature with pushbutton. Made by **Panellit, Inc.**, Panalarm Div., 7401 N. Hamlin Ave., Skokie, Ill.

▲ For more details circle NED-680 M9 on enclosed inquiry slip ▲

## PRINTER-MARKER marks 3600 bags or cartons per hour



Multiwall bags or knock-down cartons of any size can be printed, coded, or marked at production speeds up to 3600 per hour by the Flexo-Printer. Unit produces a commercial-quality imprint. Magazine feeding system has a 150-carton capacity, with individual hand wheels for carton width and thickness adjustment. In the Flexigraphic inking system, a rubber roll, running constantly in a bath of ink, comes in contact with an engraved steel metering roll which in turn applies ink film to rubber type roller. Ink supply is replenished without shutting the machine down. Made by **Industrial Marking Equipment Co.**, 257 W. 38th St., New York 18, N. Y.

▲ For more details circle NED-681 M9 on enclosed inquiry slip ▲


**10-DAY TOOL TEST**

**Discover how Customized Master Power Air Tools are Custom-Sold, Custom-Installed and Custom-Serviced**

Master Power Percussion Tools are fitted individually to your job, precision-built and can frequently be serviced on the spot. Hard chrome extends tool life 2 to 3 times. Choose from a complete line of assembly, abrasive, percussion air tools and air hoists. Write for 10-day tool test.

*Master Power*
CORPORATION • Bedford, Ohio
A Black & Decker subsidiary

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**Tempilstik°**

*temperature indicating crayons**

*Also Tempil° Pellets and Tempilaq° (liquid form)

***Tempilstik°*—a simple and accurate means of determining preheating and stress relieving temperatures in welding operations. Widely used in all heat treating—as well as in hundreds of other heat-dependent processes in industry. Available in 80 different temperature ratings from 113°F to 2500°F... $2.00 each.**

**Send for free sample Tempil° Pellets. State temperature desired... Sorry, no sample Tempilstiks°.**

**Most industrial and welding supply houses carry Tempilstiks°... If yours does not, write for information to:**

ADVERTISING DIVISION

**Tempil° CORPORATION**
132 West 22nd St., New York 11, N. Y.

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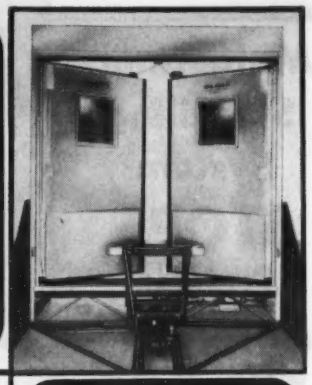
NEW CLARK

# SHOCK ABSORBER DOOR

*Takes Tough Treatment—*



Exclusive URETHANE-Filled Bumpers

**The BUMPER takes the Shock... NOT the Door**

**Visitors** to the Materials Handling Show in Cleveland watched in open admiration as an air-powered ramrod pounded the Clark Shock Absorber Door open with trip-hammer regularity.

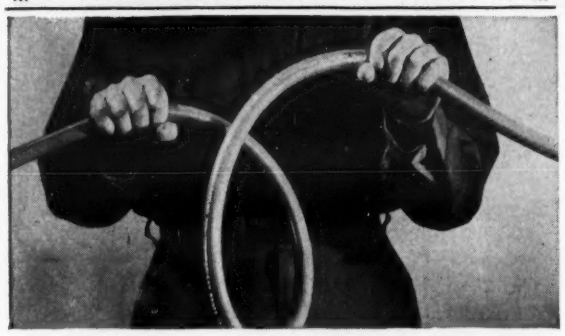
**20 times** per minute, 6 hours per day for the duration of the Show, the door was banged open, returning every time to tight, accurate closure.

**This graphic** demonstration proves the Shock Absorber Door outlasts **any contact** door on the market without wear, tear or repair. Exclusive URETHANE-Filled Bumper takes the shock. Flexibly suspended hinges let the door "ride with the punch." Neoprene seals eliminate drafts. Spring Return is guaranteed.

**If you want** to keep traffic **moving,** write for the full story on this low-cost, easily installed door. Widths: 6′ to 8′. Heights: 7′ to 10′. Please specify size of opening.

**CLARK DOOR** COMPANY, INC. *since 1878* — 511 Hunterdon St., Newark 8, N. J.

▲ For more details circle **NED-684 M9** on enclosed inquiry slip ▲



## Improved Sealtite E. F.

Sealtite type E.F.* – the original flexible, liquid-tight conduit, first to meet J.I.C. requirements – is now better than ever. New design has made it stronger, tougher, more durable in service . . . easier to install. Heavier extruded PVC jacket offers greater resistance to abrasion, cutting and tearing . . . greater oil resistance . . . greater holding power for fittings. It is more flexible – permits smaller bending diameters. New convenient markings save time, prevent waste. Length is indicated by arrows at 1-foot intervals. Trade size in inches is shown on cover. In black or gray. For free sample and more information, write: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Conn.

*Pat. Applied For 59146

**SEALTITE®** flexible, liquid-tight conduit

an **ANACONDA®** product

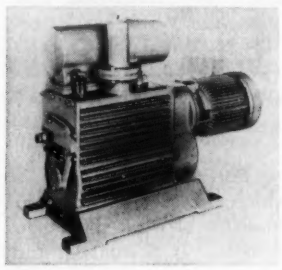
▲ For more details circle **NED-685 M9** on enclosed inquiry slip ▲

## HIGH VISIBILITY VESTS
### are super-bright for easy spotting

Increased safety to men working outdoors is provided by these super-bright, bib-style vests made of fluorescent vinyl-nylon bonded fabric. They serve as a solid red warning panel across wearer's chest and back. Coated on both sides, vests are completely reversible. One universal size fits any man, and drawstrings and elastic loops allow adjustment over heavy clothing. Distributed by **Industrial Products Co.,** 2807 N. Fourth St., Philadelphia 33, Pa.

▲ For more details circle **NED-687 M9** on enclosed inquiry slip ▲

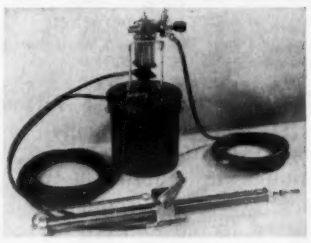
## VACUUM PUMPS
### in 7 to 106-cfm capacities



Compact oil-sealed rotary mechanical vacuum pumps in single and double-stage balanced models are available in rated capacities from 7 to 106 cfm. They range in weight from 132 lb for the 7 - cfm single - stage pump to 825 lb for the 106 - cfm double - stage model. Ultimate pressure is $2 \times 10^{-3}$ mm Hg or lower with single-stage units, and $2 \times 10^{-5}$ mm Hg or lower with double-stage units. Modular design which allows standard parts and assemblies to be used in several different models keeps prices in a $750 to $1860 range. Made by **Consolidated Vacuum Corp.,** 1775 Mt. Read Blvd., Rochester 3, N. Y.

▲ For more details circle **NED-688 M9** on enclosed inquiry slip ▲

## HYDRAULIC CAULKING GUN
### 5000-psi unit moves heavy compounds



Hydraulic pressure of 5000 psi enables this Hydro-Jet air-powered, gun - type hydraulic ram to extrude the heaviest slug - formed caulking compounds and sealers. It has instant start-stop control and can be operated at some distance from the pump. It extrudes through shaped nozzles from 1/32-in. round to ribbons of any desired size. Bead application speeds up to 100 fpm or more permit fast production-line fabrication work. Made by **Dozier Mfg. Co.,** 4227 Grove St., Oakland, Calif.

▲ For more details circle **NED-689 M9** on enclosed inquiry slip ▲

# SERVICE FOR YOUR B&D TOOLS

**Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.**

Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 1912-S, Towson 4, Md.

**Black & Decker**

QUALITY TOOL SERVICE

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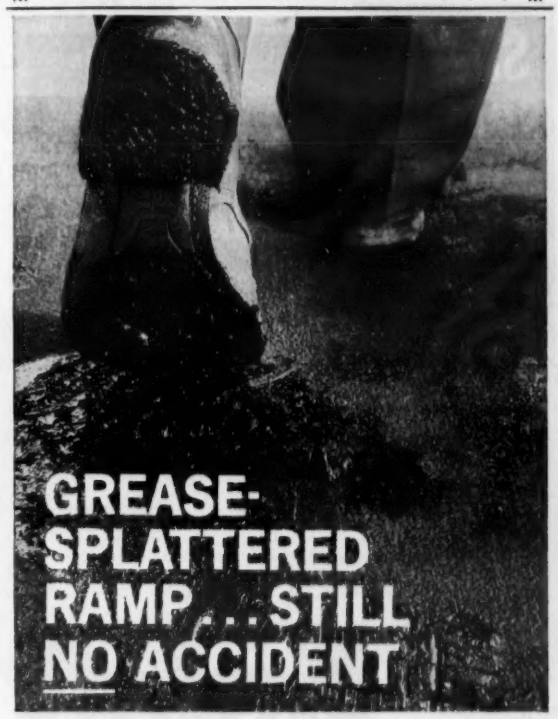


**Get Lasting Protection Against Slipping With Alcoa Abrasive Tread Plate**

Injury no longer travels this ramp. Keeping it at bay is Alcoa® Aluminum Abrasive Tread Plate with its hard, abrasive surface that remains slip-proof even when wet, oily or greasy. It is made with tough particles of fused aluminum oxide and is the only nonskid floor plate that gives all the advantages of lightweight, corrosion-resistant aluminum. Because wear only serves to renew the surface by uncovering abrasive particles imbedded below the original level, it offers lasting protection against slipping accidents that can injure skilled workers, cause expensive production breakdowns and increase insurance rates.

Find out how you can reduce accidents by installing easy-to-handle Alcoa Abrasive Tread Plate in aisles, ramps, catwalks and other areas where slippery deposits accumulate. For more information, check the coupon below, write Aluminum Company of America, 1689-M Alcoa Building, Pittsburgh 19, Pa., or call your nearest Alcoa Distributor.

ALCOA ALUMINUM

Your Guide to the Best in Aluminum Value

For Exciting Drama Watch "Alcoa Theatre," Alternate Mondays, NBC-TV, and "Alcoa Presents," Every Tuesday, ABC-TV

Aluminum Company of America
1689-M Alcoa Building, Pittsburgh 19, Pa.

Show me how Alcoa Abrasive Tread Plate prevents slipping. Please send a FREE sample—also application, design and fabricating data.

NAME AND TITLE _____

ADDRESS _____

CITY AND STATE _____

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# Top Performance and Durability!

# LESTO

## GE/UHS - $99.50

The **original** reciprocating electric handsaw has never been duplicated in performance or durability. The number of blade strokes is scientifically set to obtain maximum efficiency in cutting wood up to 2″ thick, metal, formica, fibre-glass and abrasive materials. Use it as a rip, cross-cut, coping, key-hole, band, scroll and jig—you'll be amazed by its smooth, quiet operation! Service and parts available throughout U. S.

Sole U. S. Importer of

**LESTO "SWISS MADE"** SAW BLADES

*For further information and literature, see your dealer or write*

**VICTOR J. KRIEG, INC.**
Precision-made power tools of unsurpassed performance
611 BROADWAY, NEW YORK 12, N. Y.

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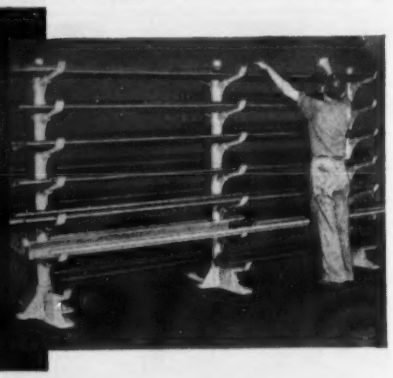
— pressure welded to main bars to give you safe, neat, easy-to-install one-piece steel grating that lasts for years. Available in a variety of types, also in stainless, to fit your specific needs. Complete engineering data given in Catalog N-129

ROCKWELL-STANDARD CORPORATION
GRATING DIVISION
4017 E. Seventh Ave., Gary, Indiana

▲ For more details circle NED-692 M9 on enclosed inquiry slip ▲



SAVE SPACE • SAVE TIME



Store and remove stock quickly—either by hand, fork truck or overhead crane—using the proved Brown Method for efficient storage. Brown Stock Racks, spaced as required, store more in less space . . . reduce handling from a long end haul to a short lateral movement. Stock is quickly visible for fast selection . . . easily accessible from the sides or ends.

Very low installation costs . . . all components are slip-fitted . . . no bolting or tools needed. Base brackets, trays and other accessories are available to increase usefulness. Both single arm wall racks and double arm racks are available.

Brown Engineering Co., 129 N. 3rd St., Reading, Pa.

■ Get complete data on Quick-Serve Racks. Write today for bulletin.

BROWN FLEXIBLE STOCK RACKS

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NEW! Bausch & Lomb VERNIER MAGNIFIER

Now you can read vernier calipers, height gauges, metal rules easier and with more accuracy with NEW pocket-size, non-breakable B&L VERNIER MAGNIFIER.

- Provides clear, undistorted view of scale lines and figures.
- Permanent Alnico magnets affix it securely to any ferrous metal.
- Clear plastic body admits all available light.

$2.50

WRITE for free descriptive literature and catalog of full line of B&L magnifiers; also name of supplier nearest to you. Bausch & Lomb Optical Co., Rochester 2, N. Y.

BAUSCH & LOMB

▲ For more details circle NED-694 M9 on enclosed inquiry slip ▲


# New Literature and Catalogs

### Metallic Gaskets & Shims

Akron Metallic Gasket Co.—Gaskets, shims, washers, installation accessories, and new filler material are described in 4-page gasket and shim guide. Cross-sectional views show constructions of various types. Latest developments in gaskets for power, chemical processing, oil refining, heating, air conditioning, and original equipment are introduced.

▲ For more details circle NED-695 M9 on enclosed inquiry slip ▲

### Mechanical Rubber Products

Selection of molded, extruded, lathe cut, and punched rubber products is shown in 66-page Handbook M-60 along with characteristics and suggested uses. Resistances of vulcanates and uses are charted, and actual solid rubber and rubber-like swatches are included. Typical custom molded products are illustrated, and over 500 parts are drawn to scale. Write on letterhead to Lavelle Rubber Co., 424 N. Wood St., Chicago 22, Ill.

▲ For more details circle NED-696 M9 on enclosed inquiry slip ▲

### Using Portable Air Tools

"How to Choose and Use Portable Air Tools" is title of 92-page handbook which presents a collection of articles written around an outline of what shop men should know about portable tools. It points out the importance of providing correct air pressures, good maintenance, the use of the right tool for the job. Write on letterhead to Rotor Tool Co., 26300 Lakeland Blvd., Cleveland 32, Ohio.

▲ For more details circle NED-697 M9 on enclosed inquiry slip ▲

### Engineered Handling Equipment

American MonoRail Co.—Railmaster heavy duty and standard light duty monorail overhead handling systems featured in 56-page Catalog C-2 comprise track, cranes, trolleys, switches, and electrification. The idea book lists hundreds of applications in many industries, such as handling of bulk materials, steel and wire, and several shipping operations.

▲ For more details circle NED-698 M9 on enclosed inquiry slip ▲

### Taper Seal Valves & Fittings

High Pressure Equipment Co.—Complete dimensional data for all stainless steel taper seal valves and fittings are furnished in 12-page Catalog 759. Specific applications are described for valves and fittings designed for up to 15,000 psi pressures in pure physics investigations, petroleum and chemical pilot plants, and nuclear reactor research. Connection data for 1/16 to ½-in. OD tubing are also provided.

▲ For more details circle NED-699 M9 on enclosed inquiry slip ▲

### Ventilator Control Systems

Barber-Colman Co.—Detailed description of automatic control systems for hot water, steam, gas-fired, and electric unit ventilators is furnished by 88-page manual. Actual control applications are shown for all makes and models marketed by major unit ventilator companies. Data sheets for each provide complete cycles of operation, damper sequence charts, specifications for precise temperature control, and installation information.

▲ For more details circle NED-700 M9 on enclosed inquiry slip ▲

### Dual-Element Cartridge Fuses

Federal Pacific Electric Co.—ECON dual-element cartridge fuses not only give fast blowing action on shorts, but afford accurate timed protection against overloads at the same time. Ferrule types rated 0 through 60 amps and knife-blade types rated 70 through 600 amps are descriptively covered in 12-page Bulletin 1330. A second section of the bulletin details the operation and application of 250 and 600-v fuses.

▲ For more details circle NED-701 M9 on enclosed inquiry slip ▲

### Molded Packing Ring

Greene, Tweed & Co.—Tabulated engineering data in 8-page Handbook GTR-759 on Palmetto molded packings list 88 G-T ring packing sizes available for piston sealing and 68 sizes for use as rod seals. Rings are offered in temperature ranges from −70 to 600° F and for back-up pressures up to 10,000 psi. They are made from a variety of natural or synthetic rubbers into a T cross-section and are supported on each side by two non-extrusion rings.

▲ For more details circle NED-702 M9 on enclosed inquiry slip ▲


Multistamp Stenciling System STOPS Freight Addressing ERRORS at JOHNSON & JOHNSON

Cartons addressed accurately, identically as dollies roll to shipping deck. Average 3 1/3 sec. per carton . . one man—one hand—operation.

Shipping address errors are virtually eliminated when printed directly on cartons by the Multistamp Stencil Duplicator. Print becomes identical smear-proof permanent part of every carton in shipment. Quantity users now save big money on VOLUME-PAK stencils . . either plain or FORM-CUT. One-day service on repeat FORM-CUT stencil orders . . less than 10 days on new orders.

MULTISTAMP STENCIL DUPLICATOR ®
THE MULTISTAMP CO. Norfolk, Va.

Write Today for your Free copy of the illustrated new how-to (and why) book about the Multistamp Marking Methods.

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. . . a time saving, cost cutting technique for industry!

die-less duplicating

Many Di-Acro Precision Metalworking Machines are known throughout industry for their "Die-less Duplicating" performance, producing parts to die accuracy at a fraction of die cost. A great variety of experimental and production parts and components can be made to close tolerances without dies using one or more Di-Acro machines in combination.

Investigate these 45 machines that punch, notch, roll, shear, bend and cut to form your product . . . better!

Di-Acro Engineering Service is available without cost or obligation.

Quick Facts Folder describes these and other Di-Acro machines

di-acro PRECISION METALWORKING MACHINES

Bending Manual gives methods for bending many materials.

O'NEIL-IRWIN MANUFACTURING CO.
354 8th AVENUE • LAKE CITY, MINNESOTA

▲ For more details circle NED-704 M9 on enclosed inquiry slip ▲

# SPECIAL GEAR BOXES

**Announcing a new Sewall Service**

Designing . . . Development . . . Manufacturing . . . to help solve your special gear box problems. We're ready to work with you at any stage of your project's development. From scratch . . . we'll design your gear boxes . . . just give us your basic idea. From your prints . . . let us submit our quotation on your requirements. We invite your inquiry . . . check Sewall Service today.

*Complete gear service . . . custom made gears . . . made-to-order sprockets . . . special gear racks—to order . . . standard gear racks in stock*

**SEWALL GEARS**

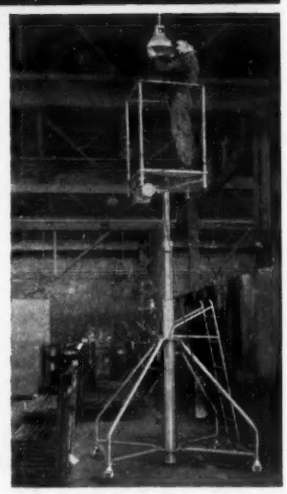
E. B. SEWALL MFG. CO., Dept. D
705 Raymond Ave., St. Paul 14, Minn. Midway 5-7721

▲ For more details circle NED-705 M9 on enclosed inquiry slip ▲



**1-MAN TOWER S-T-R-E-T-C-H-E-S TO REACH OVERHEAD WORK— SHRINKS TO CLEAR DOORS**

**Foot-Button Control with Battery Power or 110-volt a-c Plug-In**



**HIGH-LEVEL MAINTENANCE** can be completed faster, better and cheaper with this handy one-man work tower!

Moto-Lift ROLLS to the job and locks . . . RISES hydraulically under control of a foot button on the platform . . . LOWERS quickly and safely . . . TELESCOPES to clear low, narrow doors and aisles.

12-volt d-c battery operated model is *self-contained*—can be used anywhere. 110-volt a-c plug-in model has 50-ft. cable to permit work *along 100 ft.* from one electric outlet. Elevates 6'8" to 17'. 400-lb. capacity.

Write for FREE BULLETIN 712

**SAFWAY**
STEEL PRODUCTS, INC.
6212 W. State St., Milwaukee 13, Wis.

▲ For more details circle NED-706 M9 on enclosed inquiry slip ▲


# New Processes and Materials

## DRILL TIP LUBRICANT
### speeds drilling, minimizes breakage

Elf drill and tap lubricator combines the characteristics of a lubricant, coolant, and a cutting agent. In aircraft industry use, product was found to reduce tip breakage by 22 per cent and drilling temperatures by as much as 25 per cent. Applied directly to drill tips from pocket-size 4-oz container, the solid-film lubricant speeds drilling of hard metals at various temperatures. Offered by **Aviation Lubricants Co.**, 2361 India St., San Diego 1, Calif.

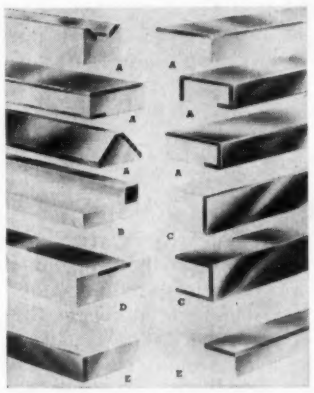
▲ For more details circle NED-708 M9 on enclosed inquiry slip ▲

## INSECT-KILLING PAINT
### alkyd finish contains insecticide

Insects touching interior walls painted with Kil-Sect alkyd paint are killed by the DDD insecticide contained in it. Finished rooms or areas remain insect-proof for long periods. Paint is applied in the same manner as other paints, and can be washed without affecting the insect-killing power. It is safe to humans and animals. Fourteen colors are available for about $7 per gallon. Made by **Consolidated Paint & Varnish Corp.**, 505 Fifth Ave., New York 17, N. Y.

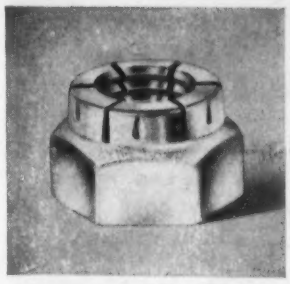
▲ For more details circle NED-709 M9 on enclosed inquiry slip ▲

## STANDARD HARDENED SHAPES
### for dies, ways, gibs, rails, plates



Over 12 standard cross sections in over 80 sizes and lengths up to 120 in. are available in standard hardened shapes. They are delivered with cutting, forming, or wear surfaces already machined, hardened, and ground. The O-Kni-Co process hardens the full depth of the tool steel to 65-66 Rockwell. Permanently soft steel backing can be drilled for dowel and screw holes. Shapes are used for dies, die sections, flange sections, ways, gibs, rails, and wear plates. Made by **Ohio Knife Co.**, Dept. H-100, Dreman Avenue, Cincinnati 23, Ohio.

▲ For more details circle NED-710 M9 on enclosed inquiry slip ▲

**FLEXLOC locknuts stay tight despite vibration**

FLEXLOC self-locking nuts lock and stay locked wherever wrenching stops. Use them as locknuts or stop nuts . . . they will not vibrate loose. Remove and reuse them repeatedly . . . they still lock securely.

FLEXLOCs are 1-piece, all-metal fasteners requiring no auxiliary locking elements. No lockwashers, jam nuts or cotter pins. Nothing extra to put together, come apart or get lost. And no nonmetallic inserts to come out, deteriorate, or be chewed up by rough bolt threads. Each thread carries its share of the load.

Because they require no separate locking devices, FLEXLOCs facilitate design and specification, simplify inventory and handling, save assembly time and costs. For complete information, see your authorized SPS distributor. Or write direct for new Bulletin 866.

INDUSTRIAL FASTENER Division **sps**
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-711 M9 on enclosed inquiry slip ▲



**NOW THE WORLD'S GREATEST VALUE IN A COPYING LATHE**

**THE CLEARING-HARRISON**

**Just $3750.00***

†Base Price F.O.B. Chicago, Los Angeles, New York.

Here are copying lathes at prices you would normally expect to pay for a standard machine! Yet the Clearing-Harrison is a world beater of a lathe—carefully designed and as rugged as they come.

**CHECK THESE FEATURES!**

**Standard Duty**—Copying mechanism doesn't interfere with the use of the lathe for standard operations.

**Induction Hardened Bed Ways**—Ways are hardened and ground by Delapena equipment—virtually exclusive with the Clearing-Harrison.

**Precision Hobbed** and hardened gears.

**Anti-Friction Bearings** to the Spindle.

**Gap Type Bed**—Removable block in bed greatly increases maximum swing.

FIND OUT MORE ABOUT THE COPYING LATHE YOU CAN OWN FOR WHAT YOU'D EXPECT TO PAY FOR A STANDARD MACHINE. WRITE CLEARING TODAY!

13" Standard model—$2,950.00†

13" Copying model—$4,850.00†

16" Copying model—$6,950.00†

16" Standard model—$4,450.00†

**Coast to Coast Service Facilities**

Clearing's nationwide facilities assure you of prompt service always. Replacement parts and accessories are stocked at Clearing and are available thru all plants, at all service centers and thru all Clearing dealers.

Clearing, division of U. S. Industries, Inc., also manufactures the Clearing-Axelson line of engine lathes, power presses of all types, dies and special tooling, and special equipment for the aircraft and missiles industry.

*Write for Clearing-Harrison catalog.*

**USI Clearing** Division of U. S. Industries, Inc.
6499 W. 65th Street • Chicago 38, Illinois

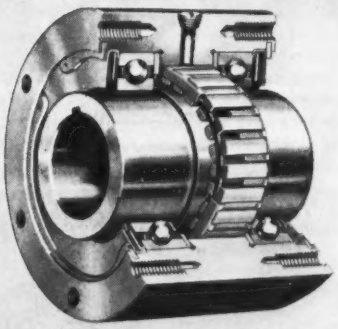
Plants in: Chicago, Ill. • Hamilton, Ohio • Los Angeles, Calif.

▲ For more details circle NED-712 M9 on enclosed inquiry slip ▲



**NEW! HIGH-PERFORMANCE FORMSPRAG CLUTCHES**

**FOR OVER-RUNNING · INDEXING**



OVER-RUNNING
INDEXING
BACKSTOPPING

Formsprag High-Performance Over-running (HPO) and Indexing (HPI) clutches are designed for those applications requiring super-performance. They have an improved sprag design and retainers that assure coordinated movement of all sprags and free-action for each sprag. This assures: positive engagement of every sprag—uniform distribution of driving load over all sprags—greater torque capacity—minimum drag during over-running—less wear—higher speed application—longer clutch life. For further information, write for HPO, HPI brochure. FORMSPRAG COMPANY, 23595 Hoover Road, Dept. 103, Warren (Detroit), Michigan.

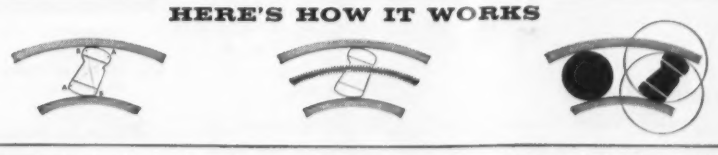
**FORMSPRAG CLUTCHES**
*World's Largest Exclusive Manufacturers of Over-Running Clutches.*

**COMPARATIVE PERFORMANCE CHARACTERISTICS**

1. **Longer Life**—At a given R.P.M., an HPO clutch has up to 70% longer life.
2. **Increased Speed**—HPO clutches can be run at up to 30% higher R.P.M. with same life span. Also, they can be modified for special applications requiring up to 20,000 R.P.M.
3. **High-Performance Indexing**—On 15° indexing, an HPI clutch with 475 lbs. ft. torque capacity can index 1200 times per minute without slip or backlash.

For further information, send for descriptive HPO, HPI brochure.

**HERE'S HOW IT WORKS**



Formsprag clutches have a full complement of sprags between concentric inner and outer races. Dimension AA is greater than BB. Rotation of one race in "driving" direction causes the sprags to wedge, transmitting full torque from one race to the other.

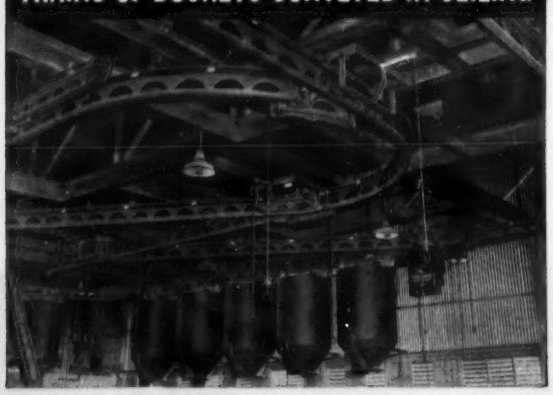
An energizing spring keeps the sprags in light contact with both races . . . there is thus no lost motion. When force is applied to the driving member, the driving torque is instantaneously transmitted between races, slippage or backlash is eliminated.

The sprag is, in effect, a "roller" of larger diameter having greater contact surface, and more sprags can be inserted within a given diameter for greater torque capacity. Also, sprags engage at constantly changing contact points to prolong clutch life.

▲ For more details circle NED-707 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-715 M9 on enclosed inquiry slip ▲

TRAINS OF BUCKETS CONVEYED IN CEILING



In many plants buckets of materials are conveyed on Cleveland Tramrail track and switch systems in the ceiling by powerful tractor drives. Control can be automatic if desired, stopping, emptying and returning without operator. Each of above buckets has 45 cu. ft. volume and 4000 lb. capacity.

Write FOR BOOK NO. 2008

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6655 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

▲ For more details circle NED-716 M9 on enclosed inquiry slip ▲

BOLD NEW DESIGN IN FLOOR MACHINES

*50% less brush wear*
*25% more efficiency*
*Lighter; easier handling*

Premier's new all-purpose floor machine now gives you scientific weight distribution. Reduced and balanced weight means that only the ends of the bristles touch the floor. New electronic starting system eliminates breaker point failure. Scrubs, waxes, polishes, shampoos, buffs, dry cleans, grinds, sands *all* floors. Models range from 12 to 22" brush sizes.

*For FREE illustrated literature fill in and mail request form today.*

THE PREMIER COMPANY
Dept. 102, 755 Woodlawn Ave., St. Paul 16, Minn.
In Canada: 35 Gerrard St. West, Toronto 2
Attention: Gordon L. Bowman, V.P. & Sales Mgr.
Please rush me FREE details on Premier Floor Machines. Thank you.

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....

▲ For more details circle NED-717 M9 on enclosed inquiry slip ▲


# New Literature & Catalogs

### Interchangeable Typewriter Type

Sperry Rand Corp., Remington Rand Div.—Special symbols and equations required in engineering can be typed with interchangeable type heads snapped into place on Remington Rand typewriters. A 12-page booklet (R 8964.6) illustrates the many symbols available. They are changed with magnetic tweezers.

▲ For more details circle NED-718 M9 on enclosed inquiry slip ▲

### Silicon Controlled Switch

Solid State Products, Inc.—Some circuit applications of the silicon controlled switch are surveyed in Bulletin D420-02 which makes liberal use of circuit diagrams. Switch permits the transistorization of many circuits and is compared to other switching elements. Basic static switching circuits, protective and logic input circuits, and various other appllications are detailed.

▲ For more details circle NED-719 M9 on enclosed inquiry slip ▲

### Protective Surface Coatings

Columbia Technical Corp.—Tips on the application of humidityproof protective surface coatings are presented in 20-page booklet "How To Use HumiSeal Protective Surface Coatings in Electronic Applications." Dipping, draining, air drying, and curing are detailed. Also covered are vacuum impregnation, spray coating and masking, silk screen coating, and roller coating.

▲ For more details circle NED-720 M9 on enclosed inquiry slip ▲

### Hinges

Stanley Works, Stanley Hardware Div.—Selective guide for determining the proper hinge for known conditions is included in revised AIA "Hinge Guide." Application sizes, sizes, and finishes are described, and two new hinges are featured in the 12-page guide.

▲ For more details circle NED-721 M9 on enclosed inquiry slip ▲

### Adjustable Speed Drive

Louis Allis Co.—Operating on alternating current, the Allispede mechanical adjustable speed drive has speed ranges up to 8:1 and ratings from 1 to 30 hp. Bulletin 3600 on the drive gives engineering and application information, as well as modifications including remote controls, mounting flanges, brakes, and remote speed indicators.

▲ For more details circle NED-722 M9 on enclosed inquiry slip ▲

### Solderless Wiring Devices

ETC Inc.—Wide choice of basic electric terminals and connectors, ranging from ring and other standard designs to multiple wire connectors and quick disconnects, is shown in 4-page bulletin. It relates the best kind of terminal for a particular use. All have a 1/4-in. long barrel for extra-long crimped connections.

▲ For more details circle NED-723 M9 on enclosed inquiry slip ▲

### Open-Web Framing

Macomber Inc.—Dimensions and properties of Allspan open-web structural steel framing members are given in 28-page illustrated Manual MA-59. They are available for spans up to 120 ft. Manual includes a table of allowable loads, properties, dimensions, and includes instructions for determining the correct size for combined uniform and concentrated loads.

▲ For more details circle NED-724 M9 on enclosed inquiry slip ▲

### Rectifiers for Plating

Djordjevic Engineering Co., DJECO Div.—Selenium, germanium, and silicon rectifiers for plating and other uses are reviewed in 16-page Bulletin 100. Offered in ratings from 100 w to 500 kw, rectifiers feature high power factors, small ripple percentages, good voltage regulation, and high accuracy.

▲ For more details circle NED-725 M9 on enclosed inquiry slip ▲

### Speed Reducers

Ohio Gear Co.—Supplementing company's present 186-page general catalog on stock gears and speed reducers, 65-page catalog covers new Hi-Line series of speed reducers. The pocket-size book is designed for fast location of engineering data which cover fin and fan-cooled reducers.

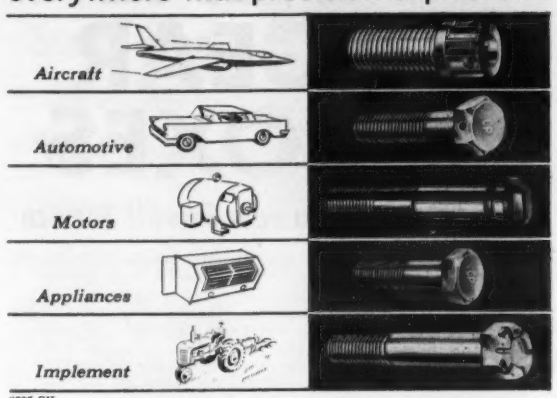
▲ For more details circle NED-726 M9 on enclosed inquiry slip ▲

### Specialty Steel

Carpenter Steel Co.—40-page guide for buyers of specialty steels is an excellent reference source for tool and die steels, stainless steels, high temperature alloys, magnetic and electrical alloys, special alloys, tubing and pipe, and fine wire specialties. Twenty-six types of stainless and corrosion-resistant tubing are described.

▲ For more details circle NED-727 M9 on enclosed inquiry slip ▲


CHANDLER serves industry everywhere with precision cap screws




8827-CH

Chandler specializes in producing a wide variety of precision cap screws offering important savings in assembly and production costs. Using modern equipment and skilled personnel, cold-headed bolts with threads rolled after heat treating are made with special heads or threads, drilled heads or shanks . . . plated or coated to meet your requirements . . . and ground to close tolerances. Write for information.

CP chandler products corporation
1495 Chardon Road • Cleveland 17, Ohio

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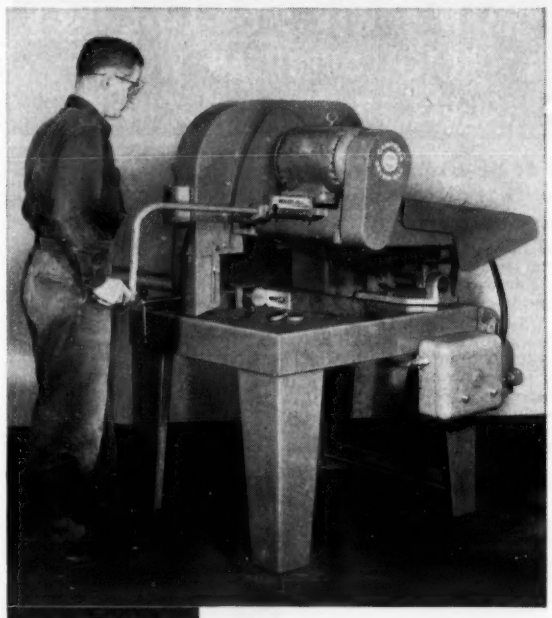
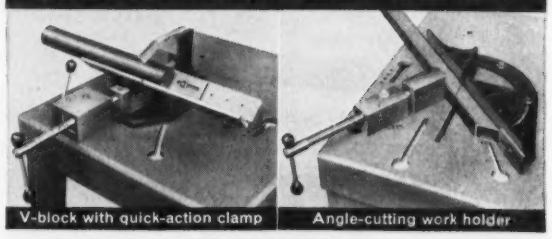


NEW! GREATEST CUT-OFF CAPACITY IN ITS CLASS!

This newest addition to the Sever-All line of abrasive cutting machines—the Model 2-A—provides greater cutting capacity and more flexibility than any other machine in its class. Check these important advantages: **Big capacity** • cuts 4" round or square solids, 5½" O.D. pipe or tubing, 6" x 1" flat stock, 6" angle iron and 8" channels. Cuts practically all metals. **Fast operation** • accurate cuts at rates of 2 to 3 seconds per square inch. **Power oscillation** • oscillation is the forward and backward motion of the wheel as it is fed down into the cut. It provides extra cutting capacity, longer wheel life, cooler cutting, and reduced operator fatigue. **Quality cuts** • clean, smooth cuts, require little or no finishing operation. **Economy** • specially developed Sever-All wheels provide lowest cost per cut.

VARIETY OF WORK HOLDERS GIVES UNUSUAL VERSATILITY


V-block with quick-action clamp
Angle-cutting work holder

Choose the work holders you need from several optional arrangements. These include the vise-type holder shown on the machine at top, plus the V-block and angle-cutting fixtures above. Screw-type and quick-action clamping may be used interchangeably.

*Write for details on the new Model 2-A Sever-All abrasive cutting machine. Ask for Bulletin DH-299*

SEVER-ALL ABRASIVE CUTTING MACHINES ACCO
Allison-Campbell Division
American Chain & Cable Company, Inc.
930 Connecticut Avenue, Bridgeport 2, Conn.

▲ For more details circle NED-729 M9 on enclosed inquiry slip ▲

**POTDEVIN**
**Label Paster**

Time savings of 30% and more with unskilled operators makes your POTDEVIN Label Paster quickly pay for itself. No adjustments required for varied shaped labels. Accurate control of adhesive minimizes waste and assures clean, neat labeling.

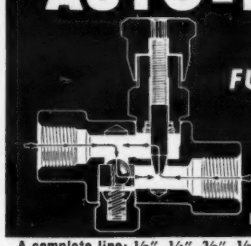
Available in 6", 8½", 12" and 18" widths.

ESTABLISHED IN 1893 POTDEVIN
**POTDEVIN MACHINE CO.**
273 North Street • Teterboro, N. J.
Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling

For more details circle NED-730 M9 on enclosed inquiry slip



**AUTO-PONENT®**
**HYDRAULIC**
**FULL FLOW VALVES**



Flow Control, Needle, Check, for HYDRAULIC Power

Model KF Flow Control Valve with Dial and Knob adjustment for direct reading and duplicating reference. Now available in Aluminum for 3000 psi.

Pat. #2,841, 174

A complete line: ⅛", ¼", ⅜", ½", and ¾" female Dryseal Pipe Sizes in all models and types. Equivalent Aeronautical Tube Sizes on special order.

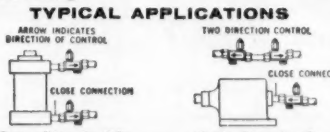
**MINIMUM PRESSURE DROP AND POWER LOSS . . .** Oversize ports and passages give maximum flow at minimum pressure drop, insure greater accuracy and response in hydraulic or large volume air cylinder control.

**EASY FLOW ADJUSTMENTS** under full pressure. Seal located at port to eliminate air or dirt traps. Gland structure equally effective on pressure or vacuum.

**SENSITIVE, CHATTERLESS BALL CHECK . . .** Patented design insures rapid ball movement to open or close at low differentials.

**FORGED BODIES** permit higher pressures with wide safety margins. Aluminum—3000 psi; Steel and Stainless Steel—5,000 psi. Pressure ratings based on better than 5 to 1 safety factor. All internal parts are Stainless. Write for illustrated catalog.

**TYPICAL APPLICATIONS**




Controlling Double Acting Cylinder — Controlling Single Acting Cylinder

AUTOMATION AUTO-PONENTS INC COMPONENTS
2929 GRANT STREET
BELLWOOD (Chicago Suburb) ILLINOIS

For more details circle NED-731 M9 on enclosed inquiry slip


## New Processes & Materials

### TEFLON BONDING AGENT permits Teflon, other material bonds

Simple method of bonding Teflon to itself and to other materials is provided by Tetra-Etch. This etchant forms a carbonaceous film which serves as a means of anchoring adhesives to the Teflon. It is compatible with various adhesives, including epoxies, phenol formaldehydes, and most rubber and silicone types. Material is poured or swabbed on the surface, then wiped or flushed off with water. Treatment time ranges from 5 sec to 1 min. Peel strength with a typical epoxy adhesive ranges from 17 psi on smooth Teflon to 35 psi on corrugated ribbon. Tetra-Etch is packaged in 2-oz bottles, sufficient for treating 1 to 3 sq ft. Made by **W. L. Gore & Associates, Inc.**, 487 Papermill Rd., Newark, Del.

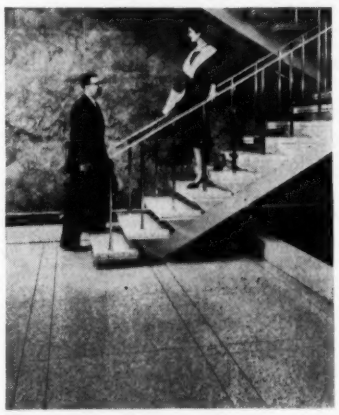
For more details circle NED-733 M9 on enclosed inquiry slip

### SOLDERING FLUX has detergent cleaning action

Noncorrosive residue remains after soldering operations using No. 641 soldering and tinning flux. Used for continuous tinning of copper wire, it gives off no corrosive fumes and has a detergent cleaning action. The product has an organic acid base. Made by **Blackstone Corp.**, 1111 Allen St., Jamestown 6, N. Y.

For more details circle NED-734 M9 on enclosed inquiry slip

### FLOOR SEALER-POLISH for use on most floor surfaces



Water - white Poli-Seal finish will not darken the lightest floors. It creates a hard, mirror - like surface that is slip resistant. Worn traffic lanes are easily patched. Combination sealer and polish can be used on light terrazzo, white cement, marble, cork, wood, ceramic and quarry tile, slate, and most vinyls and linoleums. It is water resistant and deters efflorescence of hard floors. Made by **Huntington Laboratories, Inc.**, Huntington, Ind.

For more details circle NED-735 M9 on enclosed inquiry slip

For more details circle NED-736 M9 on enclosed inquiry slip



**SNAP-LOCK** *Limit Switches*

*Actuate Two Circuits Simultaneously . . . Without Special Linkage*

The D-2400 series Snap-Lock Limit Switches with two normally open and two normally closed contacts permit making or breaking two individual circuits simultaneously. Mounting problems are simplified, special linkages eliminated and costs kept to a minimum.

Snap-Lock Limit Switches were originated by National Acme to meet the severe mechanical and electrical conditions imposed by all types of machine tools. The outstanding simplicity and ruggedness of these water and oil tight switches make them adaptable to the toughest heavy-duty assignments.

Four basic models with a wide variety of actuating levers will handle up to 5 amps, 600 volts, AC. For complete details, parts list, and scale drawings, write for Bulletin EM-5824.

**National Acme**
THE NATIONAL ACME COMPANY
182 E. 131st STREET
CLEVELAND 8, OHIO

Sales Offices: Newark 2, N. J., Chicago 6, Ill., Detroit 27, Mich.

For more details circle NED-737 M9 on enclosed inquiry slip



**SLASH MACHINERY REPAIR COSTS!**

*NEW VIBRASWITCH 66 MALFUNCTION DETECTOR MINIMIZES EXPENSIVE DOWNTIME*

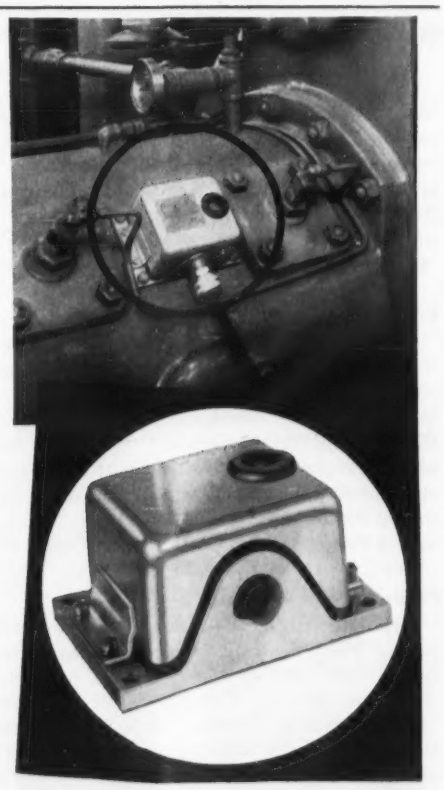
Most rotating or reciprocating machine damage is caused by failing bearings, bent shafts, broken blades or overspeeding. First indication of impending damage is machine imbalance or vibration. Frequently, this is a low amplitude, high frequency "noise"—beyond the detection ability of conventional displacement type vibrometers.

Robertshaw's low-cost Vibraswitch 66 senses these warning vibratory forces before machine damage can occur and can immediately sound an alarm or shut down the machine. For less than $100.00 this positive preventative maintenance device can be yours!

**FEATURES:** – Standard: maintenance-free – no moving parts (except when actuation occurs) – manual reset – wide range sensitivity adjustment – provision for shutdown or alarm. Optional: remote reset – starting or running time delays – multipoint operation.

**APPLICATIONS:** Pumps, compressors, gas and steam turbines, centrifuges, motors and generators, diesel and gas engines, fans and blowers, gear boxes, other rotating, reciprocating machines.

Other models available for hazardous locations requiring explosion proof housing. Write for complete technical information or phone KEystone 5-8151.



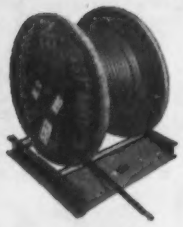
Robertshaw Aeronautical and Instrument Division

Santa Ana Freeway at Euclid Avenue, Anaheim, California

For more details circle NED-732 M9 on enclosed inquiry slip

Style "B" 4,000 lbs. cap. for 2 reels up to 24 in. wide each or 1 reel up to 48 in. wide. (weight 110#)
PRICE — $84.50
F. O. B. Cincinnati

Lowest Cost . . . Least Effort
HANDLE REELS THE MODERN WAY



Put the "eeze" in handling reels, fast, easy, efficient, safe.

WIRE-ROPE-CABLE

- No jacks
- Handle any reel diameter
- Heavy steel frame
- Slanted front
- Ball-bearing adjustable rollers
- Positive roller lock for unloading

Style "A" 2,000 lbs. cap. for reels up to 28 in. wide. (weight 60#)
PRICE — $46.50
F. O. B. Cincinnati

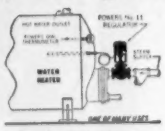
(SPECIAL SIZES QUOTED ON REQUEST.)

Order today . . . or write for details

ROLL•A•REEL 4630 Reading Road Cincinnati 29, Ohio

For more details circle NED-738 M9 on enclosed inquiry slip

End Hot Water Complaints • Stop Wasting Fuel
due to OVER-heated water



Install Powers No. 11 Self-operated temperature regulators. They prevent OVER-heated water, often pay back their cost 3 to 6 times a year and give years of reliable service. They are simple to install, dependable, economical. Write for Bulletin 329, prices and full information about this quality regulator. (c16)

THE POWERS REGULATOR COMPANY
Dept. 1259, Skokie 44, Ill.

Over 65 Years of Automatic Temperature and Humidity Control

For more details circle NED-739 M9 on enclosed inquiry slip

ENGINEER ENDS WORK STOPPAGES CAUSED BY ACCIDENTAL GROUNDS

Maintenance engineer Tom Regan reports complete elimination of production shutdowns (due to accidental grounding) through the use of the Brunt Faultfinder. Regan, who recently located and cleared an accidental ground in twenty minutes by using a Faultfinder, says: "It paid for itself with this one use. A similar ground, before we had the Faultfinder, took three days to locate." Get the full details on the money-and-time-saving Brunt Faultfinder. Write today to Parr Manufacturing, 48 Austin St., Newark, N. J.

For more details circle NED-740 M9 on enclosed inquiry slip


## New Literature & Catalogs

### Printing Method

Filmsort Co.—Card, camera, and microfilm techniques used by the U. S. Navy to produce wide variety of booklets, pamphlets, and other material are discussed in 12-page reprint. The well-illustrated article takes reader through all the steps from line composition, to page formulation, to completed publication. It also discusses possible uses of these techniques by industry.

For more details circle NED-741 M9 on enclosed inquiry slip

### Packaging Case Histories

Hoerner Boxes, Inc.—Pocket-size 12-page booklet briefly describes case histories of company's service to firms who package various items. It shows use of corrugated containers to solve packaging of such items as bicycles, dog food, recording instruments, TV picture tubes, automatic washers, brooms, and food products, as well as a product display case.

For more details circle NED-742 M9 on enclosed inquiry slip

### Miniature Electric-Eye Equipment

Photomation, Inc.—Miniaturized electric-eye equipment described in 16-page Bulletin 571 ranges from direct or partial cut-off to reflector type units. Equipment is used for counting, sorting, monitoring, assembling, and automatic weighing as applied to packaging, printing, and general production. Technical data cover dimensions, circuitry, speed, monitoring, and relays.

For more details circle NED-743 M9 on enclosed inquiry slip

### High Strength Steel

Allegheny Ludlum Steel Corp.—Type H-11 chromium-molybdenum-vanadium hot work steel is noted for its high strength up to 1000° F. Described in 24-page booklet "Potomac A High Strength Steel," metal is used in landing gears, solid propellant rocket cases, and structural sections of aircraft and missiles. Data are provided on short-time and long-time properties, fabrication techniques, and treatments.

For more details circle NED-744 M9 on enclosed inquiry slip

### Rigid Polyvinyl Chloride

Kaykor Industries, Inc.—Contents of 24-page Catalog RV-59 cover Kaykor rigid polyvinyl chloride and PVC products, its physical properties and chemical resistance, design and fabrication of rigid PVC, and applications. Plastic is fabricated into a wide variety of chemical process equipment, ventilating hoods and ducts, stacks, and small processing vessels.

For more details circle NED-745 M9 on enclosed inquiry slip

### Worm Gear Speed Reducers

De Laval Steam Turbine Co.—Single-reduction worm gear speed reducers featuring a new high-load-capacity thread form are subject of 32-page illustrated Catalog 3805. Covered are the Type D for 2½ to 4-in. centers, which adapts to any mounting position, and types for bottom drive, top drive, and vertical mounting, all available in sizes for 5 to 12-in. centers.

For more details circle NED-746 M9 on enclosed inquiry slip

### Masonry Anchors

Rawlplug Co.—Enlarged, 48-page edition of the "Masonry Anchoring Handbook" shows the proper masonry anchors to be used with each type of fixture and material. Anchoring and the care and use of masonry drills are described. Each type of anchor and drill is specified. Added sections cover the Saber-Tooth self-drilling masonry anchor and other new products.

For more details circle NED-747 M9 on enclosed inquiry slip

### Branch Connection Fittings

H. K. Porter Co., Forge & Fittings Div.—Basically the same fitting that contractors have been making themselves for years, W-S Fishmouth branch connection fittings are considerably less expensive and consistently accurate in shape. 16-page booklet describing the fitting covers cost comparisons, engineering design data, points of practical use, and major benefits to the mechanical contractor.

For more details circle NED-748 M9 on enclosed inquiry slip

### Pillow Block Bearings

Triangle Mfg. Co.—Comprehensive information on pillow block bearings and mountings, their applications, variations, lubrication, and installation is provided in 40-page Catalog 51-59. Sleeve-type, self-aligning pillow blocks, single-bolt mountings, wall bearings, pedestal bearings, tri-arm bracket assemblies, and plain and cushioned flange mountings are covered.

For more details circle NED-749 M9 on enclosed inquiry slip


MAINTENANCE PAINTING COSTS TOO HIGH

TYGON "ATD" Try... Hot Spray PAINT

SAVES UP TO 20% ON MATERIALS

SAVES UP TO 30% ON LABOR

Time, labor and materials all add up to money . . . you save on all three with Tygon ATD Hot Spray Vinyl Paint.

Using any standard hot spray equipment, heat reduces Tygon ATD to spraying consistency. One pass of the spray gun builds a smooth, tough, fast drying vinyl paint film with superior adhesion . . . that is several times thicker than cold sprayed paints. Edge build-up is perfect—there are no runs or sags—overspray is reduced. Corrosion resistance is excellent.

Using the two coat-5 mil system, *labor is reduced up to 30%, material costs up to 20%* through faster job completion, elimination of thinners and lower paint loss.

PLASTICS & SYNTHETICS DIVISION

Write today for Bulletin ATD-9

U. S. STONEWARE
AKRON 9, OHIO 205E

For more details circle NED-750 M9 on enclosed inquiry slip

Available in Stainless Steel, Silicon Bronze, Brass, Aluminum and Steel

JACOBSON NUT MFG. CORP. Kenilworth, New Jersey

For more details circle NED-751 M9 on enclosed inquiry slip



free

new filler metals chart simplifies selection of welding rods and electrodes

Tells at a glance the type rod or electrode to use for welding stainless, low alloy, non-ferrous and light metals. Covers manual, automatic and semi-automatic welding. Includes data on coated electrodes, coiled and spooled bare electrodes, cut bare rods, spooled bare wire, flux cored electrodes and bonded fluxes. Reverse side packed with AWS standard welding symbols and descriptions in handy form. SEND TODAY! ARCOS CORPORATION, 1500 South 50th Street, Philadelphia 43, Pa.

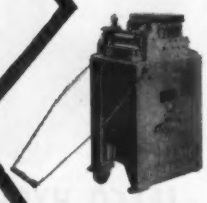
ARCOS | Filler Metal Specialists

For more details circle NED-752 M9 on enclosed inquiry slip

# LITTELL
## COIL STOCK STRAIGHTENERS

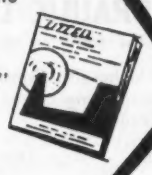
Model 208 for thin stock and parts to 8" wide, .010" to .040" thick.

The trim look of these Littell Straighteners is widely copied, but not their performance! They take the curve out of coil stock with efficiency that only Littell engineering experience can assure.
Straighteners shown handle stock .010" to .125" thick, up to 12" wide. Variable speed drives. Electric Clutch and Brake Models. Hydraulic Drive models.



Models 308 and 312 for stock 1" to 12" wide, .018" to .065" thick.

Write for Catalog "C"



Today's order ships tomorrow!

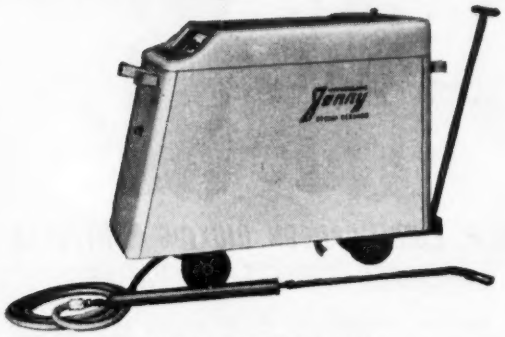
Model 412 for stock up to 12" wide, .040" to .125" thick.

F. J. LITTELL MACHINE CO. SERVING USERS OF COIL STOCK
Branches: Detroit Cleveland
4169 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

▲ For more details circle NED-753 M9 on enclosed inquiry slip ▲



## No fumes, smoke, excess water . . . with NEW E-350 all electric Jenny®!



**CLEAN AND JENOLIZE**

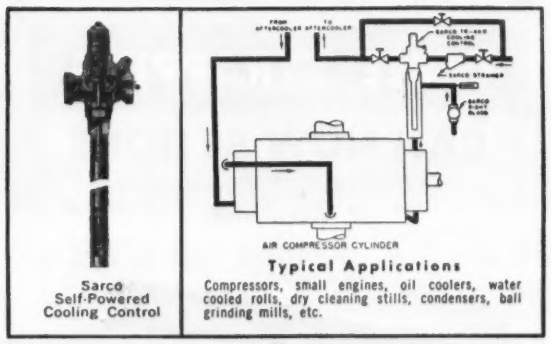
New electrically heated and powered Jenny is ideal for use wherever open flames, fumes, smoke, or excess water is objectionable or hazardous. The E-350 cuts costs of cleaning machinery parts or equipment for maintenance, repair or repainting by 60-80%!

And with the new Jenolizing process, machinery equipment and parts are left with a coating that protects against flash rusting and gives a glossy, like-new appearance to painted surfaces. Write today for complete facts about the all-new electric Jenny and Jenolizing.

hv HOMESTEAD VALVE MANUFACTURING CO.
Hypressure Jenny Division, P. O. Box 84, Coraopolis, Pa.

▲ For more details circle NED-754 M9 on enclosed inquiry slip ▲






Sarco Self-Powered Cooling Control

**Typical Applications**
Compressors, small engines, oil coolers, water cooled rolls, dry cleaning stills, condensers, ball grinding mills, etc.

# COOLING CONTROL
## protects equipment and product quality

Trying to control cooling by the hit-or-miss manual method is a pretty hopeless task. It's uncertain, sometimes dangerous . . . always costly. Wastes water.

In product processing, manual cooling control results in variable product quality, heavy rejects, production slowdowns.

You can end these problems with always-reliable Sarco SELF-POWERED Cooling Controls.

**½" size . . . only about $37**

Inexpensive. Simple. Requires no outside power source. Packless. Easy to install by any pipefitter.

Write for Bulletin 710B. Sarco Co., Inc., Empire State Bldg., N. Y. 1, N. Y.

2238-F

**SARCO**

▲ For more details circle NED-755 M9 on enclosed inquiry slip ▲


# New Processes & Materials

## LIQUID FLUX
### used on soft solders, many metals

Duzall general purpose liquid flux removes surface oxides and speeds capillary action of soft solders, even on deep joints. The nonacid product can also be used on virtually all metals except aluminum, magnesium, and diecastings. Flux is packaged in 4-oz plastic refillable containers with dispenser top and in ½-oz, 16-oz, and 1-gal plastic, and 32-oz glass containers. Made by **All-State Welding Alloys Co.**, 249-55 Ferris Ave., White Plains, N. Y.

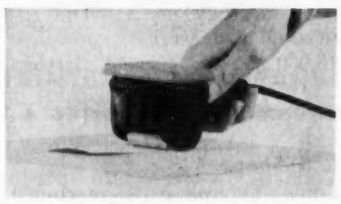
▲ For more details circle NED-756 M9 on enclosed inquiry slip ▲

## RECORDING CHART PAPER
### inkless, heat-sensitive type

Fast and legible permanent tracings of oscillographic signals on recording devices and related instruments are produced by Heatrace inkless heat-sensitive recording chart paper. It has high sensitivity to hot stylus marking systems and requires low stylus heat. Heatrace is supplied in opaque and translucent grades for direct readout and for reproduction of original traces. Samples are available from **Nashua Corp.**, Chart Paper Sales Div., 44 Franklin St., Nashua, N. H.

▲ For more details circle NED-757 M9 on enclosed inquiry slip ▲

## ROLLED-ON ADHESIVE
### speeds paper paste-up work



Applied with this electric coating device, Lectro-stik dry bar adhesive lays down a 1 in. wide nonsticky coating on any clean, dry surface for photo or paper paste-up. Being translucent, adhesive can be used with film. Paper is mounted instantly upon coating and can be peeled and re-adhered many times. Precoating is possible. Adhesive will not stain, wrinkle, shrink, curl, or grab the paper. Adhesive wipes off with a kneading eraser, or with a cloth. Coater sells for $5; a box of 24 Lectro-stiks, for $2.80. Made by **Halber Corp.**, 4151 Montrose Ave., Chicago 41, Ill.

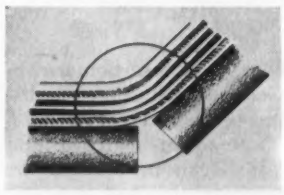
▲ For more details circle NED-758 M9 on enclosed inquiry slip ▲

## PLASTIC REINFORCED HOSE
### for use in hazardous operations

Rigid Goodrich Geon vinyl is used as reinforcement in this rubber hose instead of wire. Because it is sparkproof, it is particularly suited for industrial applications where dust and gases create explosion hazards. Hose is made up of a rubber core wrapped with a continuous coil of 3/16-in. vinyl rod and covered with an exterior layer of abrasion resistant rubber. Made by **Lawrence Hose Co.**, 2750 Brunswick Pike, Trenton, N. J.

▲ For more details circle NED-759 M9 on enclosed inquiry slip ▲

## CONVEYOR BELT
### for 45-degree idlers



Increased carrying capacity of up to 60 per cent is realized by using the Ray-Man conveyor belt with 45-degree idlers instead of 20-degree idlers. There is no ply and cover separation. "Doubly compensated" construction (see diagram) has the outer ply stretching as the inner ply contracts under both lateral and longitudinal flexing, even on reverse bends. Outer strength member plies of high strength fabric have a controlled elasticity which relieves the stress on the outer ply as it travels over the pulleys. Made by **Raybestos-Manhattan, Inc.**, Manhattan Rubber Div., 61 Willet St., Passaic, N. J.

▲ For more details circle NED-760 M9 on enclosed inquiry slip ▲


## Do you screen, sift or grade dry materials?

**Get the facts on BAR-NUN Rotary SIFTERS**

Features include: Rapid, accurate separations, achieved by complete rotary motion . . . big capacity in limited floor space . . . dust-tight, totally enclosed construction . . . easy cleaning . . . optional stainless steel product zone . . . all-mechanical heavy-duty construction. Available with from 2 to 78 square feet of screen area—for single or multiple separations of dry materials, as fine as 325 mesh. Here's real screening efficiency, economy, durability.

*Details in 6-page Bulletin 503*

FEEDING · MIXING · SIFTING · GRINDING · WEIGHING · PACKING and PACKAGING EQUIPMENT FOR THE PROCESS INDUSTRIES
**B. F. GUMP CO.**
Engineers and Manufacturers since 1872
1336 S. Cicero Avenue, Chicago 50, Illinois

▲ For more details circle NED-761 M9 on enclosed inquiry slip ▲



## CUT VIBRATOR MAINTENANCE up to 80%

with Navco's "One-Piece"* Trouble-Free Construction

- No Body Ass'y Bolts to Shear or Stretch
- No Housing Springs to Replace
- No Separate Striking Plate to Leak Air
- No Grooved Pistons to Collect Scale or Oil Emulsions

Navco "Long-Stroke" vibrators dislodge arched materials with a timed impact—don't pack them as do high frequency vibrators. Complete line of Navco "one-piece" air vibrators for bins, hoppers, chutes, R.R. cars, concrete forms, and batching.

FREE CATALOG—*Detailed information on models and applications.* Write Dept. D-12

*Patented

NAVCO® NATIONAL AIR VIBRATOR CO.
435 Literary Ave., Cleveland 13, Ohio

▲ For more details circle NED-762 M9 on enclosed inquiry slip ▲



Get Longer Wear • Eliminate Splintering, Rusting and Corrosion

Spaulding **VULCANIZED FIBRE** Materials Handling Products

**Resistant** to oils, greases, water.
**Smooth** — won't chip or split under hard wear.
**Tough** — built to withstand impact and abrasion.

**Spaulding Products** for Materials Handling are made in all standard types and sizes, or custom-made to your special needs.

SEND FOR FREE CATALOG

SPAULDING FIBRE COMPANY, INC.
Dover, New Hampshire

Please send your free catalog of Spaulding Vulcanized Fibre materials handling products.

Name _____
Firm _____
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City _____ Zone _____ State _____

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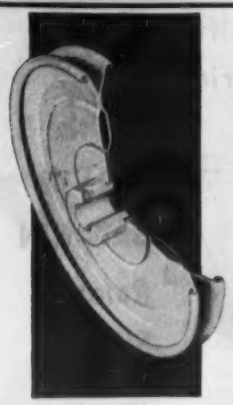


Specify Strong Smooth Safe SALEM

COPPER BRAZED

FORMED STEEL PULLEYS

for your power transmission

Engineered for Lawn Mowers, Garden Tractors, Compressors, Agricultural and Industrial Equipment. Smooth rolled edges reduce belt wear. Solid steel discs and hubs weather heavy loads and high speeds.

Write for Engineering booklet to help you specify your Pulley requirements.

SALEM STAMPING & MFG. CO., INC.
DEPT. 14 SALEM, OHIO

▲ For more details circle NED-764 M9 on enclosed inquiry slip ▲

TAKE GUESSWORK OUT of DEW POINT READING with

Alnor® DEWPOINTER

Any shop man can quickly...accurately...read dew points with the Dewpointer. It is the only instrument that lets you see the fog in a sealed chamber under controlled conditions. Compare this fast, positive method with attempts made to tell exactly when fog forms on a mirrored surface. Completely self-contained, requires no external coolant or auxiliary apparatus ...operates on enclosed battery or AC. Available in three ranges for dew points between −20° F. and room temperature, from −80° to 0° F. and −80° F. to room temperature.

Send for Dewpointer bulletin. Tear out this ad and send on your letterhead to: Illinois Testing Laboratories, Inc., Room 529, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

▲ For more details circle NED-765 M9 on enclosed inquiry slip ▲

what do you know about cable conveyors?

Don't be mislead, be well-read! Get all the facts on Dearborn Cable-Link. Find out about Cable-Link capacity – greater pay load per pound of drive than any other system. Find out about the versatility of Limber-Dip, about performance and economy. Production men who think, choose Cable-Link!

Dearborn Cable-Link Conveyor

MANUFACTURED BY
DEARBORN FABRICATING & ENGINEERING CO.
19440 GLENDALE AVE. DETROIT 23, MICH.

Write now for Dearborn's WHY CABLE Brochure.

▲ For more details circle NED-766 M9 on enclosed inquiry slip ▲


## New Literature & Catalogs

### Hydraulic Press Brakes

Verson Allsteel Press Co.—16-page Catalog HPB-59 on hydraulic press brakes specifies models ranging in capacity from 150 to 1800 tons. Typical brake dies of various types are illustrated. Mechanical press brakes and other press equipment are briefly reviewed.

▲ For more details circle NED-767 M9 on enclosed inquiry slip ▲

### Self-Locking Fasteners

Western Sky Industries—Universal, one-piece self-locking fasteners described in 20-page brochure eliminate the need for brackets and clips in attachment of wire bundles, air ducting, supply tubing, trim and floor panels, equipment racks, or shock mounting of delicate instrument assemblies. Fasteners are made in aluminum single-ended stand-off, double ended, and right-angle mountings.

▲ For more details circle NED-768 M9 on enclosed inquiry slip ▲

### Welding Wire

Air Reduction Sales Co.—Revised "Aircomatic Welding Wire Pocket Guide" includes latest information on line of gas-shielded metal-arc welding wires, as well as on improved A675 steel wire and the new A666 steel and A556 aluminum. Chemical composition, mechanical properties, and operating procedures, as well as wire diameters and packaging data, are contained in the 84-page guide.

▲ For more details circle NED-769 M9 on enclosed inquiry slip ▲

### Tube Fittings & Assemblies

Weatherhead Co., Ft. Wayne Div.—Condensed Catalog C-301 on brass and steel tube fittings, tube working tools, hose, and hose ends and assemblies used in hydraulic and pneumatic systems will aid users in selecting items best suited for their needs. The 16-page booklet tabulates sizes and working pressures which range up to 15,000 psi for Ermeto flareless fittings.

▲ For more details circle NED-770 M9 on enclosed inquiry slip ▲

### Meehanite Bar Stock & Shapes

Meehanite Metal Corp.—Typical parts machined from Meehanite standard shapes are illustrated in 16-page Bulletin 45. It shows how Meehanite bars, bushings, and shapes, cast in standard sizes to exact physical properties, are used for cams, pistons, plates, box and flat parallels, and other engineered components.

▲ For more details circle NED-771 M9 on enclosed inquiry slip ▲

### Furnace & Oven Controls

Minneapolis-Honeywell Regulator Co., Industrial Div.—40-page Bulletin B43-1C provides technical data and prices for ElectroniK potentiometers, millivoltmeters, thermocouples, Radiamatic detectors, thermometers, flame guard systems, industrial controls, and final control elements.

▲ For more details circle NED-772 M9 on enclosed inquiry slip ▲

### Flux Reclaiming Equipment

Robert Holmes & Brothers, Inc.—Fused flux from submerged arc welding equipment can be reclaimed for further use by application of equipment described in 4-page illustrated Bulletin 104-A. Its crusher has a magnetic separator and a perforated screen plate. Also incorporated is an air cleaner.

▲ For more details circle NED-773 M9 on enclosed inquiry slip ▲

### Cellular Insulating Materials

Great American Industries, Inc., Rubatex Div.—Closed cell tube, wrap-on, and hardboard insulations for a wide variety of applications are subject of 8-page illustrated Catalog T-259. Their properties, dimensions, and general data are supplied.

▲ For more details circle NED-774 M9 on enclosed inquiry slip ▲

### Spray Finishes

Bee Chemical Co., Logo Div.—Low cost, nontarnishing, nongelling Bronzeless Gold spray finishes are displayed and discussed in 8-page booklet. The hard, easily applied finishes are offered in matched and standard colors. Savings which can be realized are evaluated, and application data are included.

▲ For more details circle NED-775 M9 on enclosed inquiry slip ▲

### Cylinders for Automation

Airmatic Valve, Inc.—Line of air, water, and oil cylinders, and valve-cylinder combinations for automation applications are specified in 24-page Bulletin 91017. Line covers bore sizes from 3/8 to 4 in. and ratings from 0-300 to 0-2500 psi.

▲ For more details circle NED-776 M9 on enclosed inquiry slip ▲


SAVE — MONEY — TIME — ENERGY

Pat. Pending

LEXCO HYDRAULIC LIFT TABLES

Capacities 500# to 10,000#.

Portable, adjustable height, Hand or Foot Operated. For lifting and transporting heavy castings, dies, etc., to machines and Presses.

Also Die Handlers — Strip Stock Handlers — Roll Handlers.

LEXCO ENGINEERING & MFG. CORP.

20 W. Chestnut St. • Souderton, Pa.

▲ For more details circle NED-777 M9 on enclosed inquiry slip ▲

NEW KIDDE CARBON DIOXIDE PORTABLES AWARDED HIGHEST U. L. RATINGS!

Four new Kidde carbon dioxide extinguishers have been awarded *highest* Underwriters' Laboratories ratings. The portables are available in 15 and 20 lb. capacities with either squeeze valve or trigger operation.

They feature new hose and discharge horn assemblies which are responsible for their extra fire fighting ability. The new assembly is supplied also with Kidde's 10 pound carbon dioxide portable which has a U. L. rating not exceeded by any other extinguisher of its capacity. This hose-horn combination is also being offered as a replacement unit for existing 10, 15 and 20 lb. units, and when attached will upgrade their effectiveness equal to the new ratings. For complete information on these top-rated units, write Kidde today.

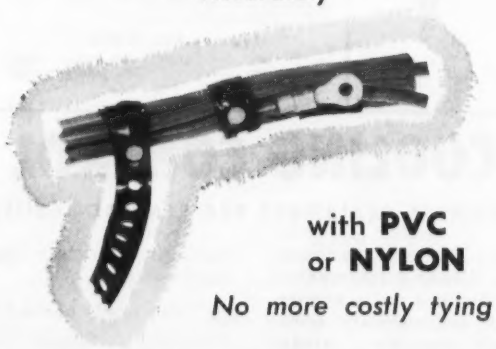
Kidde

Walter Kidde & Company, Inc., 1224 Main St., Belleville, N. J.
Industrial and Marine Division

▲ For more details circle NED-778 M9 on enclosed inquiry slip ▲

CABLE STRAPPING

CAN NOW BE DONE
• Quickly • Permanently
• Accurately



with PVC or NYLON

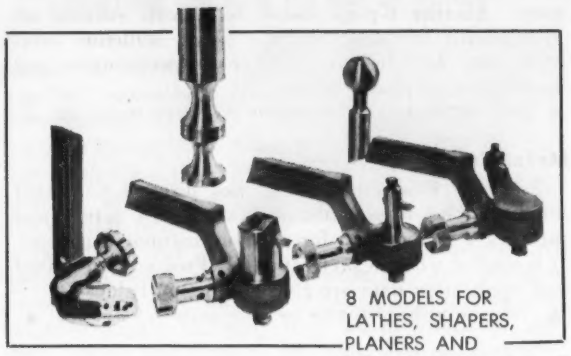
No more costly tying

If you have a cable strapping or marking problem . . . send today for samples and catalogues, to:

HELLERMANN CORPORATION
701 SENECA ST. • BUFFALO 10, N.Y.

▲ For more details circle NED-779 M9 on enclosed inquiry slip ▲

# PRECISION
## SHAPLANE RADIUS TOOLS




Range: 3/8" to 3" for concave radii on lathes. Two sizes for convex radii (Balls up to 2½" dia.) on lathes. Also heavy duty model for radii to 6" on planers, etc.

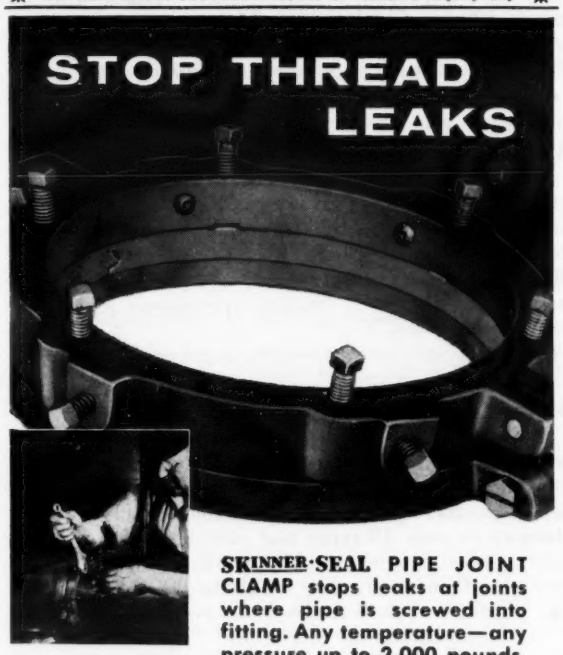
*Write for Circular* *Patent Pending*

**C. B. TEETER,** TOOL ROOM SPECIALTIES

3443 N. Greenview Ave., Chicago 13, Ill. Phone: DRexel 3-3571

▲ For more details circle NED-780 M9 on enclosed inquiry slip ▲






**SKINNER-SEAL PIPE JOINT CLAMP stops leaks at joints where pipe is screwed into fitting. Any temperature—any pressure up to 2,000 pounds. Saves the cost of tearing out and renewing leaky fittings. Prevents shutdowns. Has served industry 60 years. Stocked by most distributors.**

M. B. SKINNER CO., South Bend 21, Ind. — Established 1898

▲ For more details circle NED-781 M9 on enclosed inquiry slip ▲


# New Processes & Materials

## METAL CUTTING COMPOUND
### for drilling, threading, milling

Aid in overcoming surface tension, stress, and metal-to-metal adhesion which prevents tool rotation is provided by Metal Tenderizer cutting compound. It is suited for use in drilling, threading, reaming, milling, and shaping of hard metals and alloys. Available in 16-oz cans, it minimizes tool wear and breakage, produces clean threads, and contributes to good surface finish. Made by **Crest Products, Inc.**, Box 64, Union, N. J.

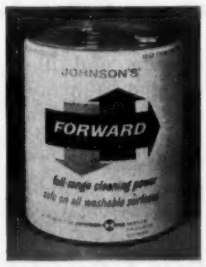
▲ For more details circle NED-783 M9 on enclosed inquiry slip ▲

## EPOXY FLOORING COMPOUND
### adheres well to metal, glass, tile

Excellent adhesion to metals, ceramics, wood, floor tile, glass, and other materials is inherent in this epoxy resin flooring or patching compound. It is reportedly stronger than high strength concrete and has five to six times the impact resistance. Compound also resists concentrated acids and alkalies, as well as exterior exposure. Natural clear, gray, red iron oxide, and grass green colors are offered. Compound dries hard enough in 24 hr to permit foot traffic. Made by **Clinton Co.**, 1210 Elston Ave., Chicago 22, Ill.

▲ For more details circle NED-784 M9 on enclosed inquiry slip ▲

## MAINTENANCE CLEANER
### action is not neutralized by dirt




Sustained cleaning power is formulated into Forward alkaline maintenance cleaner which is silicate buffered for safety. Release of alkali is triggered by reaction with acids present in dirt. When mop or sponge transfers dirt to cleaning solution, no fade-out of cleaning power occurs. The non-ionic detergent will remove stubborn soils that have been sealed in with a build-up of grease or soap scum. It contains a sanitizing agent and does not require rinsing. Cleaner is recommended for floors, walls, painted surfaces, furniture, equipment, and machinery. It is safe and mild to hands. Offered in 5, 30, and 55-gal containers by **S. C. Johnson & Son, Inc.**, 1525 Howe St., Racine, Wis.

▲ For more details circle NED-785 M9 on enclosed inquiry slip ▲


# Dust

**TRAP THIS DANGEROUS ENEMY with**

*Hammond*
**DUSKOLECTORS**

Dust is a serious problem in most industrial plants. With Hammond DUSKOLECTORS you trap this dangerous enemy at its source before it can harm the health and efficiency of your employees and damage valuable machinery. Your cleaning and painting costs will also be reduced. Hammond DUSKOLECTORS offer you the best and most economical solution to your dust problems. Write today for catalog with helpful engineering information and interesting installation views.

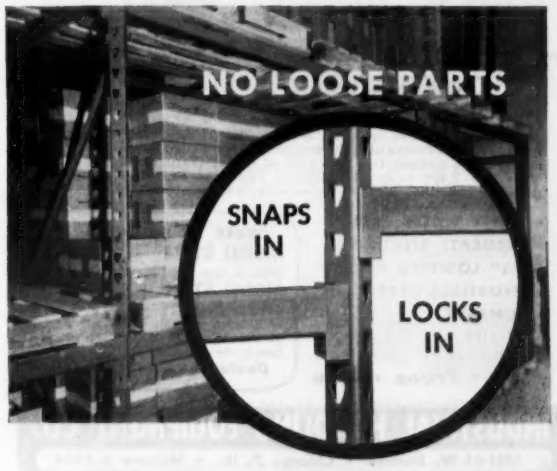
***"A MUST FOR DUST!"***

*Hammond Machinery Builders* INC.
1623 DOUGLAS AVE. • KALAMAZOO, MICHIGAN

▲ For more details circle NED-786 M9 on enclosed inquiry slip ▲



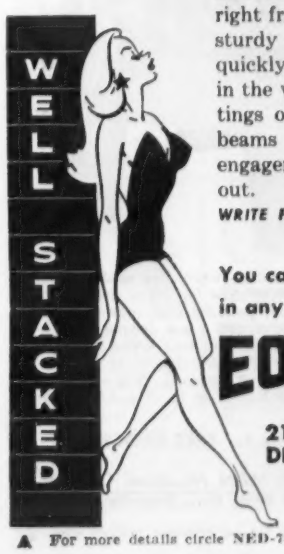
# FAST!
## EMI *air-row head*
## FULLY ADJUSTABLE PALLET RACKS




★ EASY TO ERECT
★ ONLY 2 BASIC PARTS
★ SIMPLE TO ADJUST
★ QUICK TO RELOCATE

**EMI** AIR-ROW Head Racks easily adjust to stack pallets, skids, dies and bulk of varying heights. Upright frames are tied together with sturdy steel support beams which quickly snap into AIR-ROW slots in the vertical post. Forge lock fittings on the ends of the support beams insure positive self-locking engagement with no sway or pop-out.

***WRITE FOR OUR COMPLETE CATALOG!***




**You can stack or ship ANYTHING in any industry on EMI racks**

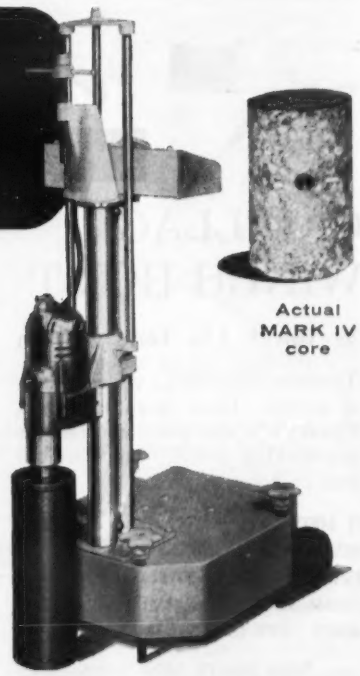
**EQUIPMENT MFG. INC.**
21566 HOOVER ROAD
DETROIT 5, MICHIGAN

▲ For more details circle NED-787 M9 on enclosed inquiry slip ▲



# drill ONE INCH every 40 SECONDS
## in steel-reinforced concrete

## with the new hydraulic MARK IV
## DIAMOND CORING MACHINE



Actual MARK IV core

Exclusive HYDRO-CUSHION CONTROL makes the Mobile Drill *MARK IV* the first and only masonry drilling machine on the market with *automatic hydraulic feed.*

"Cushioned" hydraulic feed *automatically* maintains the correct drilling pressure and rate of feed . . . absorbs drilling vibration to insure up to 1/3 *greater diamond bit life.*

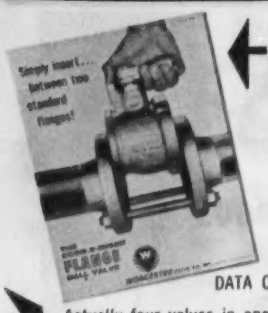
*MARK IV* is designed and built to give you exceptional drilling speed, ease, economy and long, trouble-free service.

Write for complete information on the MARK IV and Mobile "Thinline" Oriented Diamond Bits.

MOBILE DRILL INDUSTRIAL DIVISION

**MOBILE DRILLING, Incorporated**
INDUSTRIAL DIVISION
Dept. A
960 North Pennsylvania Street • Indianapolis, Indiana

▲ For more details circle NED-782 M9 on enclosed inquiry slip ▲



JUST OUT!

BULLETIN EF-201
DATA ON NEW FLANGE BALL VALVE

Actually four valves in one. Basic unit adapts to either 150# or 300# valve where dimensions shorter than ASA are advantageous. The center section is simply and quickly inserted between two standard flanges. Flanges are then bolted together. To convert to ASA, this same center section, with the simple addition of an appropriate "spacer", becomes either a 150# or 300# ASA dimension valve.

This new flange valve incorporates the many advantages of ball-valve operation, including full-round flow, 2 way operation, in-line maintenance, wide range of seat and seal materials, compactness, and many other unique features. Three inch through six inch size range.

Low initial cost and lower maintenance cost add up to the lowest inventory cost . . . one valve for four different applications.

Write today for Bulletin EF-201.

WORCESTER VALVE CO., INC.
16 PARKER STREET, WORCESTER 10, MASS.

For more details circle NED-788 M9 on enclosed inquiry slip



NEW Top Quality...Low Price

FULLY HYDRAULIC
PALLET TRUCKS

ONLY
$350.00
(F.O.B. CHICAGO)

Now you can have quality at the lowest price of any hand operated, full hydraulic, fork-type Pallet Truck on the market. Designed to answer the majority of Pallet transportation problems, the 2,400 and 4,400 pound capacity Pallet Trucks are quality manufactured, extra-sturdy, yet light weight.

- SHORT WHEEL BASE
- ACCURATE STEERING
- 3¼" LOWERED HEIGHT
- EFFORTLESS OPERATION
- COMPACT
- 5" LIFT

ORDER BY MODEL NO.
MODEL BT 24 — 2400 lb. Cap. ..... $350.00
MODEL BT 44 — 4400 lb. Cap. ..... $395.00
Both models available in 20" and 27" widths; 36", 42" and 48" lengths. Specify when ordering.
Dealer Inquiries Invited

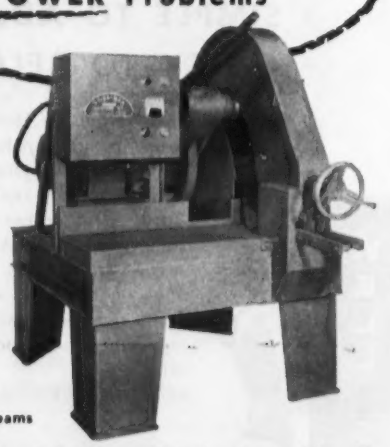
Write • Phone • Wire

INDUSTRIAL HANDLING EQUIPMENT CO.
1221-23 W. Monroe • Chicago 7, Ill. • MOnroe 6-8554

For more details circle NED-789 M9 on enclosed inquiry slip



New 30HP "CHOP" Saw Ends UNDERPOWER Problems



CUTS
Steel structurals
Bar stock
Heavy cable
Pipe
Test sections
Forging blanks
Extrusion blanks
High temperature alloys
Rigging steel
Fixtures and jigs
Cross ties
Heavy wooden beams

Now . . . power *when* you need it—*where* you need it—with the radically new 30 HP "CHOP" Saw for wet or dry cutting. Advanced features include more powerful main motor, sealed-bearing spindle, timing belt drive, and a new dynamic suspension system that permits light fingertip feed without springs, counterweights or adjustments. Provides straight or variable-speed oscillating feed at option of operator. Screw-operated double vise quickly adjusts to handle up to 8" x 8" sections or solids.

Ty-Sa-Man SINCE 1885

Write for FREE BROCHURE
TY-SA-MAN Machine Co., Inc.
550 White Ave., Knoxville, Tenn.

For more details circle NED-790 M9 on enclosed inquiry slip


# New Literature & Catalogs

### Ideas That Improve Efficiency

Calumet & Hecla, Inc., Wolverine Tube Div.—Using a brush burrer to increase production of short lengths of copper and brass tubing up to 400 per cent is but one of several quality-improving ideas presented in 10-page folder. Use of a drill press table to speed analysis and using a photo album to record progress are other ideas contributing to efficiency.

For more details circle NED-791 M9 on enclosed inquiry slip

### Turret Drilling Machines

Brown & Sharpe Mfg. Co., Turret Drilling Div.—Random hole patterns in one, two, and many planes; concentric bolt circles in flat surfaces and at different angles; and straight line hole patterns are among applications of turret drilling machines covered in case history Bulletin T-102. Tooling employed and operational and time details are covered.

For more details circle NED-792 M9 on enclosed inquiry slip

### Use of Wire & Strip in Design

E. H. Titchener & Co.—How design engineers are able to cut costs, improve quality, and improve sales appeal of products through the use of wire and strip metal components is related in 24-page handbook. Major types of wire and finishes available, wire sizes, and the various end treatments, threading, and forming are covered.

For more details circle NED-793 M9 on enclosed inquiry slip

### Work-Holding Tools

Chicago Tool & Engineering Co.—Over 68 production, tooling, and maintenance work-holding tools are described and illustrated in Palmgren Catalog 27. Included are drill press, angle, and swivel machine vises; adjustable angle plates; rotary, milling, and tilting tables; lathe milling attachments; and machine tool accessories.

For more details circle NED-794 M9 on enclosed inquiry slip

### Ultrasonic Cleaning Equipment

C. & E. Marshall Co.—Two folders of 4 and 6 pages describe and illustrate a line of ultrasonic cleaning equipment, materials, and accessories. One such machine cleans small watch-size parts, while another series of three machines handles somewhat larger parts in 20-oz to 5-gal tanks. Application information and prices are included.

For more details circle NED-795 M9 on enclosed inquiry slip

### Floor & Carpet Care

Advance Floor Machine Co.—Step-by-step instructions for cleaning and maintaining all popular types of hard and resilient floors, including carpet shampooing, are found in illustrated manual, "How To Cut Overhead Underfoot." Data on selecting the proper equipment, cleaners, and waxes are presented, as are treatments for common floor troubles.

For more details circle NED-796 M9 on enclosed inquiry slip

CADILLAC WINCH HOIST

½ Ton ★ 1½ Ton ★ 2 Ton

Tested to full 100% overload. Lever acting. Dual operating speed. Operates in any position. Double interlocking pawls. Light weight and compact.

IT LIFTS • IT PULLS • IT LOWERS
REVERSIBLE HANDLE
EVERY HOIST LOAD-TESTED FOR MAXIMUM SAFETY, MAXIMUM PERFORMANCE. $29.50 AND UP.

Model 202WN, 1½ Ton Cap.

Send inquiry card today.

*Full year guarantee against defective workmanship and materials.*

ALUMINUM PRODUCTS, INC.
698 S.W. 2nd AVE. ESTABLISHED 1943 FT. LAUDERDALE, FLORIDA

For more details circle NED-797 M9 on enclosed inquiry slip


### Sling Chain Safety

McKay Co.—12-page booklet, "Vital Links to Safety," contained in a six-part sling chain safety kit covers inspection procedures, safety cautions, working load limits, proper use and care of chain, and other subjects. Another 6-page folder deals with assorted attachments for sling chains. Other bulletins cover McK-alloy chain features, sling chain specifications, and approaches to chain safety.

For more details circle NED-798 M9 on enclosed inquiry slip

### Metal Treatment

Rusticide Products Co.—Applied directly on rusted metal, Ospho metal treatment stops rust action and provides a sound base for regular maintenance paint. It is applied without pretreatment. Product is described and application data are given in 4-page Folder 16.

For more details circle NED-799 M9 on enclosed inquiry slip

### Resistors

Reon Resistor Corp.—Technical data on precision wire wound and composition variable resistors are contained in 24-page engineering catalog. Each type of resistor is discussed in detail, with much information presented in chart and data form.

For more details circle NED-800 M9 on enclosed inquiry slip

### Drying Equipment

J. P. Devine Mfg. Co.—Chamber, rotary, drum, flaker, freeze, and pan types of drying equipment and vacuum pumps and accessories are detailed in illustrated 12-page Catalog 201. Many photos, diagrams, and drawings illustrate the various drying methods. Data presented aid in selection and application.

For more details circle NED-801 M9 on enclosed inquiry slip

### Strippable Protective Coatings

Bischoff Chemical Corp.—How tools and small metal parts can be protected for storage, handling, or shipping with a tough, transparent coating by dipping them in Thermo-Cote strippable plastic coating is shown in Bulletin 100. It is easily peeled off when tools or parts are needed for use. Various compounds for varied uses are described.

For more details circle NED-802 M9 on enclosed inquiry slip

### Bearing Blocks & Takeups

Link-Belt Co.—Eight series with 119 new sizes are available in line of babbetted, bronze, and plain bore bearing blocks and takeups. Subject of 16-page Booklet 2707, the equipment is available for off-the-shelf delivery in over 15 types and over 300 sizes of solid, split, gibbed, angle, or flanged pillow blocks for up to 12-in. diameter shafting. Takeup sizes number 200.

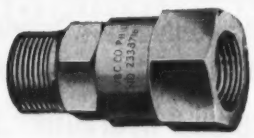
For more details circle NED-803 M9 on enclosed inquiry slip

### Sectional Belt Conveyor

Stephens-Adamson Mfg. Co.—Comprehensive technical data, advantages, and an exploded view of pre-engineered sectional belt conveyor are furnished in Bulletin 458. The quality components are pointed out.

For more details circle NED-804 M9 on enclosed inquiry slip


KEEPS HOSE FREE from Harmful Twists and Kinks



"DIXON" SWIVEL CONNECTION

Used on end or intermediate connections this practical I.P.T. fitting eliminates twisting and kinking in hose in sizes up to ¾" I.D. Turns freely and remains leakproof under pressure. No parts to get out of order. Steel, cadmium plated.

ORDER FROM YOUR DISTRIBUTOR

DIXON Valve & Coupling Co.
GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING LTD TORONTO

For more details circle NED-805 M9 on enclosed inquiry slip

# New Processes & Materials

## HEAT TREAT SCALE PREVENTIVE
### coating applied by dip or spray

Scale formation on metal during heat treating operations is prevented by a spray or dip application of Skalix. This coating adheres to the metal to form an oxygen-tight seal, even at furnace temperatures. As the metal cools, the coating pops off, and in most cases no further processing is needed. It can be used on most metals, including stainless, nickel-chrome, cobalt, copper, and some of the exotic alloys. This relatively inexpensive scale preventive has a coverage of 1500 sq ft per gal. Developed by North American Aviation, Inc., and distributed by **Navan Products, Inc.**, 900 N. Sepulveda at Imperial, International Airport, Los Angeles 45, Calif.

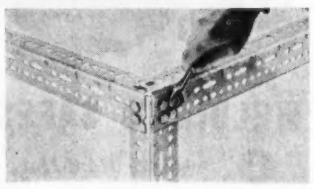
▲ For more details circle **NED-806 M9** on enclosed inquiry slip ▲

## CONTACT CEMENT
### will bond Styrofoam to metal

Nonflammable Flex Neotite No. 1317 contact cement not only resists water and heat, but will perform such difficult jobs as bonding Styrofoam to metal without crazing. Used wherever fire hazards are prevalent, product can be water thinned, has a pleasant odor, and is nonirritating. Coverage is 350 sq ft per gallon. Cement flows and covers like paint and does not string or web. Tool and equipment cleanup is accomplished with soapy water. Developed by **Flexcraft Industries, Inc.**, 527 Avenue P, Newark 5, N. J.

▲ For more details circle **NED-807 M9** on enclosed inquiry slip ▲

## SLOTTED STEEL FRAMING
### makes racks, carts, tables, guards



Both 12 and 14-gage cold rolled steel with Tico galvanized finish are used in Rapisteel Slotted Angle, a building material with prepunched holes and premeasured cutting marks. It is used for making storage racks, stock carts, tables and work stands, maintenance platforms, machine guards, and varied brackets and supports. A 9/16-in. wrench is the only tool required for bolting the slotted angle members together. Made with unequal sides, it can be joined in a variety of combinations, including channels and T, I, and J-sections. Material can be reused. Decking material and a cutter are available. Made by **Rapids-Standard Co.**, 342 Rapistan Bldg., Grand Rapids 2, Mich.

▲ For more details circle **NED-808 M9** on enclosed inquiry slip ▲

## METAL PRIMER
### penetrates and seals out rust

Phenolic resin penetrant in Rust Magic metal primer carries the pigment and vehicle through sound rust and locks itself to the metal substrate. This seals the surface, locks out moisture, and prevents further rust development. Saturation action neutralizes porous rust, making it an actual ingredient of the paint film. Primer dries to the touch in 20 min and can be topcoated in 2 hr with almost any finish. It is offered in half-pints, pints, quarts, gallons, 5-gal pails, 55-gal drums, and 16-oz spray cans by **Krylon Inc.**, Ford & Washington Streets, Norristown, Pa.

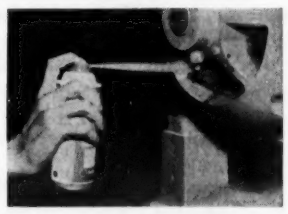
▲ For more details circle **NED-810 M9** on enclosed inquiry slip ▲

## FLOOR PATCHING MATERIAL
### shockproof and corrosion resistant

Perfect adhesion to any clean surface, even if it is damp, is attributed to Vyniflex floor patching and resurfacing material. It resists acids, alkalies, salt, oil, fat, grease, water, trucking, or abrasion. Material can be feather-edged and used for grouting or repointing tile or brick. It is shockproof, antislip, nonflammable, warm to the feet, and can be used inside or outside on concrete, wood, asphalt, metal, brick, or composition floors. Overlays of only 1/8 in. can be made. Ready for traffic in 18 to 24 hr, material is offered in four colors and natural. Made by **Flexrock Co.**, 3603 Filbert St., Philadelphia 1, Pa.

▲ For more details circle **NED-811 M9** on enclosed inquiry slip ▲

## AEROSOL SPRAY SOLVENT
### for motors, machines, and parts



Long range drenching spray of Swish Elektrokleen chemical solvent dispensed from a 16-oz aerosol spray can removes oil, grease, dirt, and dust. Solvent can be used on electric motors, parts, and plant equipment. It will also de-moisturize equipment that has been short circuited by water. The noncombustible solvent will drain off and dry, leaving no residue to pick up dirt. It is nontoxic and noncorrosive to metals and paint. Case lot price is $1.30 per can. Made by **Montgomery Chemical Co.**, Jenkintown, Pa.

▲ For more details circle **NED-812 M9** on enclosed inquiry slip ▲


TIME YOUR TESTS IN SPLIT-SECONDS

GRA LAB

ALL PURPOSE INDUSTRIAL TIMERS

MODELS AT $23.95 TO $29.95

You can set the large 8" dial for any desired time period within an unusually wide range of 3600 possible settings, (i.e., 1 sec. to 60 min., 1 min. to 60 hrs., etc.). At end of preset interval alarm sounds and external load is automatically switched on or off.

Gra-Lab Micro Timers, **Electric Stop Clocks**, are available in 1/10 sec. or 1/1000 min. graduations for split-second measurements of elapsed time in laboratory or production operations, Price $37.50

WRITE FOR COMPLETE CATALOG!

DIMCO-GRAY COMPANY 203 E. Sixth St. DAYTON 2, OHIO

▲ For more details circle **NED-814 M9** on enclosed inquiry slip ▲



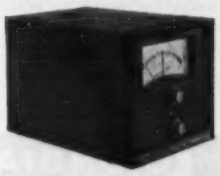
NO TEMPERATURE OVERSHOOT

WHEN SIMPLYTROL MINDS THE POT

time-proportioning controller has unique anticipating action

Low-cost Simplytrol gives you high-accuracy temperature control . . . effectively maintains temperature to within ± 1°F. of set point on most applications. An ingenious anticipating circuit eliminates overshoot difficulties by shutting off heat input at a time-proportioned interval before the set-point temperature level is attained.

Built around the well-proven A.P.I. meter-relay design, Simplytrol uses no amplifying circuits or vacuum tubes; it is exceptionally stable and reliable. The unit is available in thirty ranges from −400°F. to +3000°F., is packaged in a newly re-styled table-mounting case that converts in minutes to panel mounting.



SEND FOR DATA SHEET 9-B

api ASSEMBLY PRODUCTS, INC. Chesterland 61, Ohio

U.S.A., 1913

▲ For more details circle **NED-815 M9** on enclosed inquiry slip ▲



LESS LINER! MORE GLOVE!

Photomicrograph of a cross section of a typical North PVC glove. Notice the extra-thick coating. That's where the wear is!

That's why North PVC gloves by Jomac give longer service . . . better protection!

We use lightweight knitted liner, *extra coating*. Some manufacturers use heavy canton flannel liners, *less coating*. Total weights may be same, but you get better value with North PVC gloves. Also, we offer better selection of sizes. That means greater comfort, dexterity, productivity!

FREE OFFER. On your business letterhead, describe your working conditions; we will send sample pair! Do it today!

JOMAC INDUSTRIAL GLOVES

Jomac Incorporated, Dept. G, Philadelphia 38, Pa.
Plants in Philadelphia, Pa., and Warsaw, Ind.
In Canada: Safety Supply Company, Toronto
In Europe: North-Jomac Ltd., London, W1

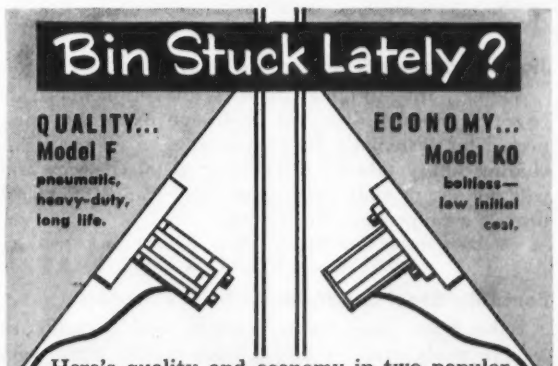
▲ For more details circle **NED-809 M9** on enclosed inquiry slip ▲



Bin Stuck Lately?

QUALITY... Model F
pneumatic, heavy-duty, long life.

ECONOMY... Model KO
boltless—low initial cost.



Here's quality and economy in two popular Cleveland Air Vibrators . . . Model F and Model KO.

Easily demountable, these vibrators speed the flow of dry materials in bins and hoppers—give users continuous, trouble-free performance.

Send now for complete application information and performance data.

THE CLEVELAND VIBRATOR CO.

Dept. 12K-2744 Clinton Ave. • Cleveland 13, Ohio

▲ For more details circle **NED-813 M9** on enclosed inquiry slip ▲



DRIPS COST YOU MONEY!

STOP COSTLY DRIPPING PERMANENTLY WITH EASY-TO-USE PLS

. . . assures a positive seal for the life of the connection

. . . insoluble in water, steam, gas, many chemicals, refrigerants, oil, gasoline and L-P gases

. . . good for temperatures to 550°F., pressures to 6000 psi.

PLS never dries, cakes or hardens . . . withstands vibration, expansion and contraction . . . allows easy disassembly, even after years of service . . . and protects fittings against rust and corrosion.

*Available in 1-lb. cans (brush top or friction), 5-lb. cans, 15 and 28-lb. pails, 85-lb. drums, also 4-oz. plastic tubes.*

Just apply a little PLS to screwed fittings, plugs, flanges and gaskets and forget your leakage problems.

SEND FOR A FREE SAMPLE TODAY!

CRANE PACKING CO.
6411 Oakton St., Morton Grove, Ill. (Chicago Suburb)
In Canada: Crane Packing Co., Ltd. Hamilton, Ont.

CRANE PACKING COMPANY

▲ For more details circle **NED-816 M9** on enclosed inquiry slip ▲

Whether you mark materials, parts, products or packages, there's a Markem machine ready to bring low cost, high production identification or decorative marking to your plant. From plastics to fabrics . . . transistors to camera parts . . . multi-color decorative marking to high production offset marking — there's a *Markem Method* to meet your marking needs. One source, with 47 years of experience in all industries, can supply the machines, type, inks, accessories and service you need. For complete information, write Markem Machine Company, Keene 3, New Hampshire.

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EVERYTHING INDUSTRY NEEDS . . . FOR PROFITABLE MARKING . . . SINCE 1911

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Balance loads, check welding current, avoid shutdowns, reduce repair costs. TONG TEST AMMETERS measure both alternating and direct current. No electrical connections required, simply press trigger and snap tongs around electrical conductor for instant readings. Interchangeable ranges up to 1000 amperes; impossible to read the wrong scale.

Rugged and dependable, safe and accurate. No coils or wires to burn out. Eight types of TONG TEST available for conductors up to 3⅞" diameter or bus bars up to 4½" x ½".

Write for Catalog ND-400

COLUMBIA

**COLUMBIA ELECTRIC MFG. CO.**
4525 Hamilton Ave.
CLEVELAND 14, OHIO

▲ For more details circle NED-818 M9 on enclosed inquiry slip ▲

Compact, economical, safe. All revolving parts are covered. Instantly adjustable. Shreds ⅛" to ⅜". Designed for continuous and trouble-free service.

Quickly shreds newspapers, magazines, waste paper, cellophane, tissue, corrugated cartons, wax paper, etc. into uniform resilient 1/8" to 3/8" strands, ideal for packaging purposes. Especially adapted to shredding confidential records, blue prints or any classified material. Send for descriptive bulletin S1255. Names of users near you available on request.

FREE TRIAL! Operate a SHRED ALL for 30 days — if not satisfied — return — owe nothing.

**UNIVERSAL SHREDDER CO.**
2934 Bay Road — Saginaw, Michigan

▲ For more details circle NED-819 M9 on enclosed inquiry slip ▲


# New Literature & Catalogs

### Water-Cooled Magnetic Clutch

Vickers Inc., Electric Products Div.—Tension control and cycling where high slippage between input and output rotating members generates excessive heat are applications for the water-cooled Magneclutch. The magnetic particle unit can also be used for braking. Heat is dissipated rapidly by the clutch, offered in eight sizes from 10 to 200 lb-ft. Specifications are given in Catalog EPO-6126-3.

▲ For more details circle NED-820 M9 on enclosed inquiry slip ▲

### Solid Carbide Burs

Thomas C. Wilson, Inc.—Fourteen different solid carbide burs, each available in three or four shank diameters, with coarse, standard, or fine fluting in plain, chipbreaker, or diamond cut, are detailed in 12-page Catalog CB-59. They are used with power hand tools and flexible shaft machines for cutting metals, plastics, and other materials. Prices and selection data are included.

▲ For more details circle NED-821 M9 on enclosed inquiry slip ▲

### Lift Trucks

Hyster Co.—Lift trucks engineered to handle loads in the 10,000 to 12,000-lb range are described and illustrated in 8-page brochure. The Challenger 100-120 trucks offer dual-range power shift transmission, short turning radius, and fast lifting speed, plus various options, attachments, and accessories.

▲ For more details circle NED-822 M9 on enclosed inquiry slip ▲

### Counters & Pulse Generators

Electro-Pulse, Inc.—Factors in instrumentation selection and application are covered in technical articles contained in 48-page 1950-60 general catalog. Detailed are general purpose pulse generators, word generators, time delay generators, and electronic counters. Extensive technical information is presented along with specifications.

▲ For more details circle NED-823 M9 on enclosed inquiry slip ▲

### Plastic Moldings

Continental-Diamond Fibre Corp.—Company's compression, transfer, and injection molding processes are discussed in 12-page booklet, "CDF Moldings." Both thermosetting and thermoplastic materials are molded. Materials and sizes of parts available by each process are covered, along with properties of nine CDF molding materials. All parts are made to customer specifications.

▲ For more details circle NED-824 M9 on enclosed inquiry slip ▲

### Pneumatic Conveying Systems

Young Machinery Co.—A variety of pneumatic conveying systems for transferring bulk shipments to storage, for in-plant handling, and for bulk loading of railroad cars, trucks, or containers is shown in 8-page Bulletin P259. Low pressure, small capacity systems; closed circuit systems; and high pressure fluidizing type systems are covered.

▲ For more details circle NED-825 M9 on enclosed inquiry slip ▲

### Jig Grinder Accessories Cabinets

Vidmar, Inc.—Vidmar jig bore and jig grinders accessories cabinets described in 4-page folder are engineered for systematic dust-free storage of all parts, including rotary tables. Drawers open all the way and will not sag or spill, even when fully-loaded. Typical drawer arrangements are shown.

▲ For more details circle NED-826 M9 on enclosed inquiry slip ▲

### Portable Steel Scaffolds

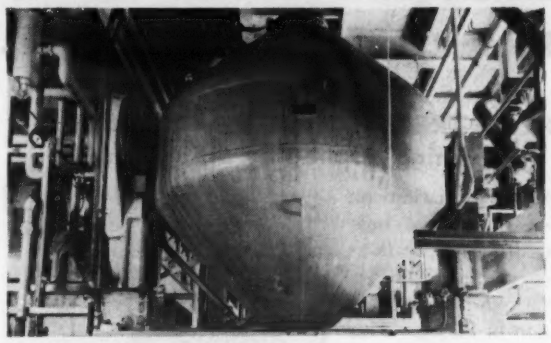
Baker-Roos, Inc.—Baker portable steel scaffolds assemble easily and rapidly to form a safe, rigid work platform which is adjustable in 3-in. increments from 22 in. to 5 ft 8 in. Sixteen-page Form 10-559 shows versatility of the single scaffold unit, as well as numerous setups possible with multiple units to provide higher, wider, or longer work platform areas.

▲ For more details circle NED-827 M9 on enclosed inquiry slip ▲

### Safety Glasses

American Optical Co.—Construction and safety features of Safemaster, Two-Tone, Mahogany and Pink Crystal, and all-metal frame Ultrascopic safety glasses are presented in 12-page Catalog S-8582. Glasses are available with clear lenses with or without side shields, and with Calobar lenses for protection against glare, ultraviolet, and infrared radiations as well as impact of flying particles.

▲ For more details circle NED-828 M9 on enclosed inquiry slip ▲

**Concentrate . . . impregnate . . . react . . . coat . . . dry . . . blend . . . with one machine**

Better yet, you can do a number of these operations in one cycle. You get a whole chemical plant in one machine when you buy the Pfaudler Conical Dryer-Blender.

This leads to important savings. You shorten over-all processing time, reduce intermediate materials handling, buy less equipment, use less floor space.

You cut costs even with single-operation use. Glasteel inner tank assures fast cleaning and product purity, ends metallic contamination, slows product adherence, resists corrosion from acids at high temperatures, alkalies at moderate temperatures.

You get high heat transfer, fast drying, thorough blending, full vacuum and up to 30 psig. (Minor changes permit higher pressures.)

You can pre-test before you buy, in our laboratory or your plant. The cost for either is nominal.

Write to our Pfaudler Division, Dept. NED129, Rochester 3, N. Y., for Bulletin No. 963.

75 YEARS CREATING FOR TOMORROW

**PFAUDLER PERMUTIT INC.**

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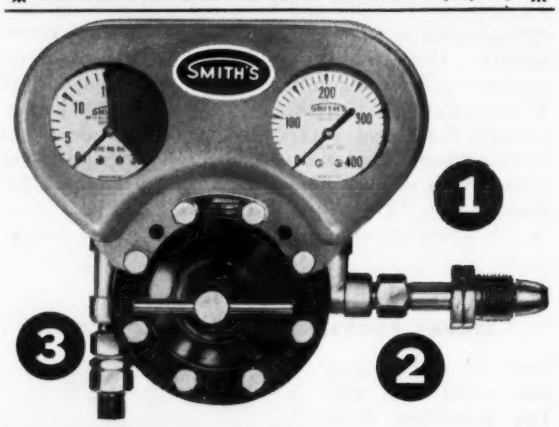


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1. *Regulator Hard Hat* prevents gauge breakage.
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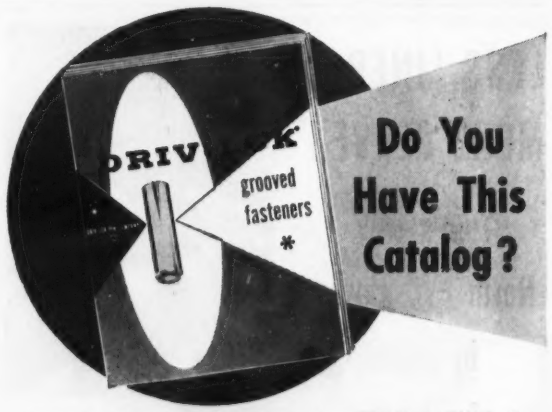
3. *Regulator Flo-Trol* prevents reverse flow of gases, eliminates danger of explosion.

*Ask your Smith's distributor for the SAF-T-PAK Regulator (oxygen, acetylene, or LP gas) or write to*

**SMITH WELDING EQUIPMENT CORPORATION**
*2633 S. E. Fourth Street, Minneapolis 14, Minn.*

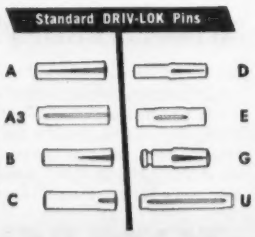
▲ For more details circle NED-830 M9 on enclosed inquiry slip ▲






**Contains Complete details on grooved pins and studs YOURS FOR THE ASKING!**

Write for your copy of the DRIV-LOK catalog today. Contains factual data in concise, easy to use form. Illustrated with typical applications that may help solve a fastening problem for you. Sent without obligation, of course.




**DRIV-LOK** SALES CORPORATION
717 Park Avenue • Sycamore, Illinois

▲ For more details circle NED-831 M9 on enclosed inquiry slip ▲

**Read Pressures from 3000 to 1 Micron QUICKER and MORE ACCURATELY**

**Kinney®**

**COMPENSATED THERMOCOUPLE GAGE**

Now—you have complete interchangeability of gage tubes . . . no need to match tubes . . . no recalibration. And you have accuracy ± 10% at 50 microns with readings within ½ second or less. No waiting for warm-up of tubes, the KINNEY Compensated Thermocouple Gage gives you instantaneous reading from station to station.

- Fast warm-up of control circuit . . . ready to read 3 seconds after unit is turned on.
- Complete interchangeability of gage tubes without recalibration of gage control circuit.
- Cable lengths up to 400 feet between tube and control circuit are allowable.

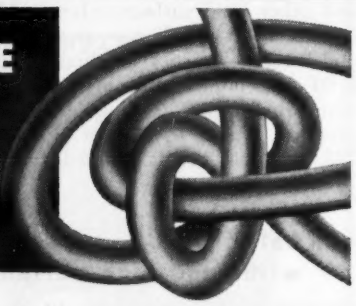
Write for information on KINNEY Thermocouple and Ionization Gages

**KINNEY** MFG. DIVISION
THE NEW YORK AIR BRAKE COMPANY
3612M WASHINGTON STREET • BOSTON 30 • MASS

▲ For more details circle NED-832 M9 on enclosed inquiry slip ▲



**MALTESE CROSS TEFLON HOSE**



**DOES "THE IMPOSSIBLE"!**

Think of it. This new Hewitt-Robins hose offers long service with fluids that cannot be handled in premium standard constructions. Lined with Teflon, the latest DuPont fluorocarbon plastic, Maltese Cross Teflon hose is ideal for rugged steam, chemical, hydraulic, or pneumatic service. Inert to action of a great many corrosive chemicals, including nitric acid and sodium hydroxide, temperature resistant from −65° to 420°F., and non-adhesive to cut flow resistance and simplify cleaning, this hose provides long-term returns on hose investment. Maltese Cross Teflon hose is available in sizes from ½" to 3" i.d. Write Hewitt-Robins, Stamford, Conn., today for Bulletin 12-14.

**HR HEWITT-ROBINS**

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

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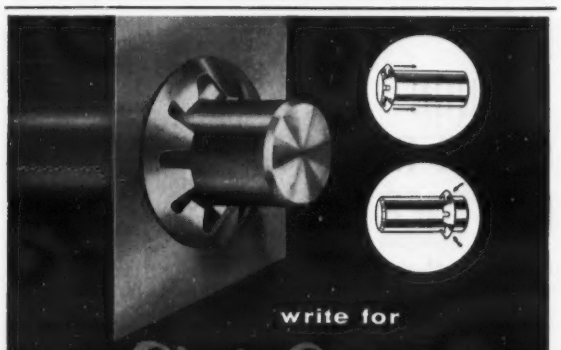


write for

**Shaft Retention FASTENERS**

**CATALOG TODAY!**

*Featuring Fastex® Springrip Fasteners*

Springrip Fasteners simply slip on shaft or stud. Biting teeth resist dislodging movement. Full story told in new catalog containing data on Springrip Fasteners, Plasti-Rings®, Push-On Fasteners and "C"-Rings.

**FASTEX** 195 Algonquin Road, Des Plaines, Illinois
Division of Illinois Tool Works

▲ For more details circle NED-834 M9 on enclosed inquiry slip ▲


# New Processes & Materials

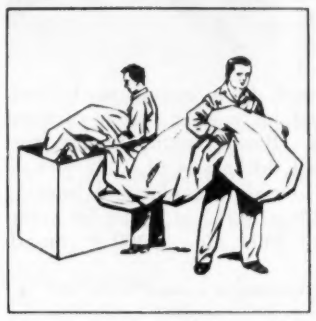
## PIPE JOINT COMPOUND withstands 550° F and 6000 psi

One-ounce vinyl plastic tubes of Plastic Lead Seal, an industrial pipe joint and thread sealing compound, hold enough for normal joint requirements. They are small and pliable, permitting use in close quarters. Compound can be used up to 550° F and 6000 psi. It prevents seizing and galling and remains permanently plastic for easy disassembly. Use is in chemical, petroleum, LP and natural gas, water, steam, and other services. Made by **Crane Packing Co.**, Dept. ND-5, 6400 Oakton St., Morton Grove, Ill.

▲ For more details circle NED-835 M9 on enclosed inquiry slip ▲

## RESIN-COATED FABRICS remain flexible from −80 to 375° F

Modified polyester resin applied to nylon, dacron, and glass cloth or other types of fabrics in various weaves to provide the desired burst and tear strengths comprises Irvington 4222 coated fabrics. They resist sunlight, ozone, mildew, wind, salt water, aromatic and aliphatic solvents, ketones, and esters at room temperature. Various colors are available in 7 and 14-oz per square yard coated weights. Fabrics remain flexible from −80 to 375° F.



Uses include truck tarpaulins, shipboard covers, fuel cells, protective clothing, diaphragms, ducting, and splash curtains. Material made by **Minnesota Mining & Mfg. Co.**, Irvington Div., Dept. D9-412, 900 Bush Ave., St. Paul 6, Minn.

▲ For more details circle NED-836 M9 on enclosed inquiry slip ▲

## TRACK-RESISTANT LAMINATE for use in 5 to 15-kv range

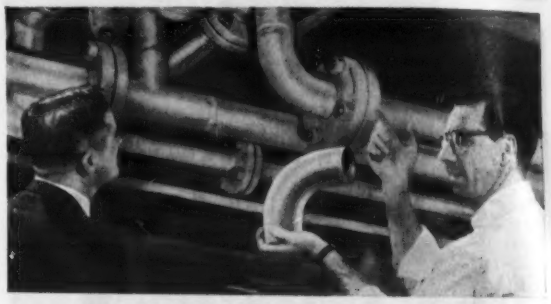
Usable under adverse environmental conditions, Grade UTR Resistrac glass fiber-polyester laminate is flame retardant and track resistant. It offers advantages in apparatus operating at voltages over 1 kv or in applications with short creep distances, particularly where humidity and surface contamination conditions are present. Track resistance is rated with a 200-hr value under the proposed ASTM test procedure. Resistrac laminate is available in standard sheet sizes of 36 x 72 and 24 x 36 in., in thicknesses from ⅛ to ¾ in. Made by **Glastic Corp.**, 4321 Glenridge Rd., Cleveland 21, Ohio.

▲ For more details circle NED-837 M9 on enclosed inquiry slip ▲

## STAINLESS & NICKEL WIRE now available in pay-off drums

Almet stainless steel and nickel alloy wire is now obtainable in Pay - Off - Pak drums which hold as much as seven times the wire on conventional coils. Drums hold from 50 to 150 lb of annealed temper wire, depending upon wire diameter. Crimping or one hole hard rivet quality and tempers are packed in drums holding from 200 to 400 lb. The drum package facilitates handling and increases wire cleanliness. Lower and wider than conventional drums, they are readily stacked in storage areas. Lid can be replaced to keep excessive dust off wire. Made by **H. K. Porter Co.**, Riverside-Alloy Metal Div., Riverside, N. J.

▲ For more details circle NED-838 M9 on enclosed inquiry slip ▲

**MORE PIPE LENGTH**
**. . . with Speedline FITTINGS**

Compare Speedline's Extra Pipe Length bonus with conventional fittings.

| I.P.S. SIZE | ½" | ¾" | 1" | 1¼" | 1½" | 2" | 2½" | 3" | 4" |
|---|---|---|---|---|---|---|---|---|---|
| 90° Elbow | 2½" | 3" | 2¾" | 2½" | 2½" | 3" | 2½" | 4" | 4½" |
| 45° Elbow | 2½" | 3" | 2¾" | 2½" | 2½" | 3" | 2½" | 4" | 4½" |
| Tee | 4⅛" | 4½" | 4⅛" | 3¾" | 3⅜" | 4½" | 4⅜" | 4⅞" | 4⅞" |
| Cross | 5½" | 6" | 5½" | 5" | 4½" | 6" | 6½" | 6½" | 6½" |

With 100-2" Speedline elbows you get 25' more pipe than with conventional fittings. How do these pipe savings add up for your requirements?

GET EXTRA PIPE LENGTH ON EVERY END OF EVERY SPEEDLINE FITTING . . . DESIGNED FOR USE WITH ECONOMICAL LIGHT WALL STAINLESS STEEL PIPE. WRITE FOR FREE CATALOG.

*Distributors are located in principal cities from coast to coast*

Speedline® STAINLESS STEEL FITTINGS
manufactured by
**HORACE T. POTTS CO.** 532 E. Erie Ave., Phila. 34, Pa.

▲ For more details circle NED-839 M9 on enclosed inquiry slip ▲

*to protect customer goodwill with . . .*

**S.S.White PLASTIC PLUGS AND CAPS**

For mere pennies you can insure customer goodwill . . . by protecting your products with S.S. White plastic plugs and caps. Not a chance of damaged threads, dirt, moisture, or leakage during shipping or handling. And . . . the extremely simple removal of S.S. White plugs and caps will demonstratably save him money and production time. They come off rapidly by hand . . . no shreds, no residue left in the part.

And don't forget . . . their rapid installation and low cost mean savings in your plant too!

*Two lines to choose from:*

**The quality line**—of rigid acetate . . . tough, non-brittle, impervious to petroleum-base oils and greases, outstanding impact strength.

**The economy line**—of elastoplastic vinylite . . . a "non-slip grip" for rapid installation and removal, a "stay-put fit."

**WRITE FOR FREE BULLETIN**
*(P5708) and samples*
*(please state size and type)*

**S.S.White PLASTICS DIVISION**
Dept. 7P • 10 East 40th Street • New York 16, N.Y.

▲ For more details circle NED-840 M9 on enclosed inquiry slip ▲

*metal merchandising cabinets*

*by* **WATERLOO**

**CAN MAKE SALES FOR YOU**

**Skillfully designed for your special needs . . . expertly engineered for long service . . . attractively finished for sales appeal. Submit your specifications for ideas and cost estimates.**

WATERLOO VALVE SPRING COMPRESSOR CO.
Waterloo, Iowa

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**AS LITTLE AS $285 MAKES YOUR HOISTS and CRANES into Fork Lifts**

You can now handle pallet and other unit loads where fork trucks are too expensive or impractical. America's foremost industries are saving thousands of dollars in first cost, handling cost, operating cost, and maintenance cost with Cady Pallet Lifters. Repeat orders from users everywhere are proof of satisfaction and economy. Counterbalanced to hang level, they are easy to use, save time and reduce non-productive handling costs in plants, in yards, on docks, and on job sites. Standard models up to 10,000 lbs. capacity—custom models to fit special loads and conditions. Write or phone JAckson 4145 for full information and name of distributor.

**CADY METAL FABRICATING INC.**
84 SCHENCK ST. • N. TONAWANDA, N. Y.

▲ For more details circle NED-842 M9 on enclosed inquiry slip ▲

**LITTLE BRUSHES THAT HANDLE BIG FINISHING JOBS**

OSBORN

**OSBORN SITUFT® AND HELITUF®** brushes solve tough, time-consuming cleaning and deburring jobs. They can put the profit back in your small-job finishing operations. The reason: better brush design for greater speed, efficiency and versatility. Size ranges from ⅛" to 1¼" diameter. *The Osborn Manufacturing Company, Dept. N-13, Cleveland 14, Ohio.*

**FREE BOOKLET** *...gives complete, illustrated data on specifications and applications. Write for your free copy.*

Osborn Brushes

METAL FINISHING MACHINES . . . AND FINISHING METHODS
POWER, PAINT AND MAINTENANCE BRUSHES • FOUNDRY PRODUCTION MACHINERY

▲ For more details circle NED-843 M9 on enclosed inquiry slip ▲

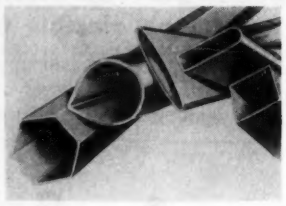
# New Processes & Materials

## REPAIR KIT for piping, tanks, roofing

Everything needed for either permanent or temporary repair of cracks and holes in plastic, wood, or metal is contained in the Industrial Plastic and Fiberglass Repair Kit. It furnishes plastic putty, liquid plastic resin, hardener for both putty and resin, glass fiber cloth tape, and mixing and measuring tools. Once mixed and applied, both putty and resin harden quickly for sanding and painting. Full strength is reached in 8 to 16 hr. A "promoter" for instant hardening in cold weather is available. Kit offered by **Fibre Glass-Evercoat Co.**, Kugler & Blue Ash Road, Cincinnati 36, Ohio.

▲ For more details circle NED-844 M9 on enclosed inquiry slip ▲

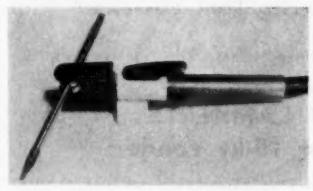
## TUBING SHAPES offered in stainless and low alloy



Square, rectangular, and special shapes of carbon, low alloy high strength, and stainless steel tubing for pressure, mechanical, heat resisting, ornamental, and atomic applications is available in a range of sizes. Shapes are formed from round stock from tooling which is on hand for a wide variety of common and special shapes. Round tubing ranges from ⅝ to 6-in. OD with wall thicknesses of 0.028 to 0.25 in. for the carbon and low alloy grades and from ⅝ to 4¾-in. OD with 0.028 to 0.165-in. walls for stainless. Made by **Standard Tube Co.**, 24400 Plymouth Rd., Detroit 39, Mich.

▲ For more details circle NED-845 M9 on enclosed inquiry slip ▲

## CUTTING TORCH has pushbutton air valve in handle



Flash removal and cutting holes are uses for the heavy duty H-55 Arcair cutting and gouging torch. It is suited for work requiring air on both sides of the electrode. Torch has a pushbutton air control valve in its insulated handle. Either ½ or ⅝-in. diameter electrodes can be used. Only compressed air and welding current connections are required. Made by **Arcair Co.**, Box 431, Lancaster, Ohio.

▲ For more details circle NED-846 M9 on enclosed inquiry slip ▲

**PRE-PRINT CONTAINERS for EXTRA PROFITS**

.....use industrial's **NEW AUTOPRINTER!**

**With the new, modern Autoprinter, you date, mark or code multiwall bags and containers as you need them! Completely automatic and electronically controlled, the Autoprinter works right with your production line . . at up to 3,000 impressions per hour!**

**Investigate how the Autoprinter can speed your operation, save container pre-printing and storage costs, and eliminate costly manual marking expense.**

Write for details and catalog today. Dept. NED

ime INDUSTRIAL MARKING EQUIPMENT company, Inc.
655 BERRIMAN ST. BROOKLYN 8, N.Y. NI 9-3305

▲ For more details circle NED-847 M9 on enclosed inquiry slip ▲

## ALUMINUM TINNING PROCESS calls for 4-min immersion in bath

Engine pistons, transmission components, and other parts of aluminum can be immersion tinned in a 165-175° F bath using ARP No. 200 Stannate M compound. Process produces a smooth, adherent tin coating on the work with only a 4-min immersion. Little sludge is formed, and hydroxide content need not be controlled. Only control procedure required is periodic checks of the tin content. Powdered compound is supplied in 25, 100, and 400-lb packages for mixing in ratio of 7½ oz to 1 gal of water. Made by **Allied Research Products, Inc.**, 4004 E. Monument St., Baltimore 5, Md.

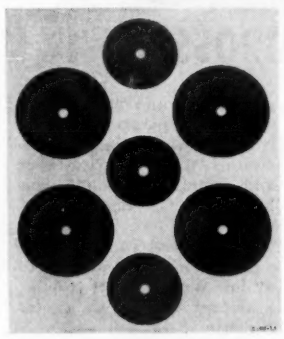
▲ For more details circle NED-848 M9 on enclosed inquiry slip ▲

## TWO-PART EPOXY ADHESIVE bonds polystyrene to many surfaces

An assembly bonded with Bondmaster M685 two-part epoxy adhesive can be handled in 6 to 8 hr and develops 85 per cent of maximum strength in 14-24 hr. It can be heat cured in as little as 10 min at 250° F with a hardener. The 100 per cent solids, unfilled, modified adhesive bonds rigid expanded polystyrene to metal, wood, and other rigid surfaces where operating temperatures in excess of 120° F are encountered. Metal-to-metal and metal-to-plastics bonding are other uses. Pot life is 60 to 90 min, or 45 min with CH-34 hardener. Price is reported to be considerably lower than that of similar products. Made by **Rubber & Asbestos Corp.**, Dept. P, 225 Belleville Ave., Bloomfield, N. J.

▲ For more details circle NED-849 M9 on enclosed inquiry slip ▲

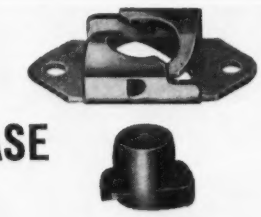
## ABRASIVE DISCS withstand high peripheral pressures



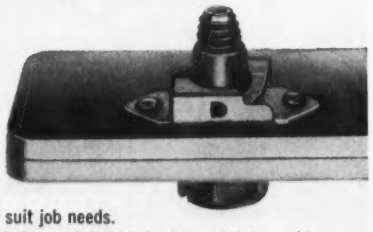
Blanking method which does not cause structural changes in the fiber backing of Red Coat resin fiber abrasive discs contributes to their long working life. They withstand high working pressures on the periphery, thereby minimizing grain loss. Standard diameters from 5 to 9⅛ in. have ½ and ⅞-in. center holes. Their aluminum oxide abrasive has grit sizes from 80 to 16. Full or spaced coating is optional. Main use is where heavy stock removal causes excessive heat generation. Made by **Michigan Abrasive Co.**, 11900 E. Eight Mile Rd., Detroit 5, Mich.

▲ For more details circle NED-850 M9 on enclosed inquiry slip ▲

**ESNA® ¼ TURN QUICK RELEASE FASTENER**



***Consider these unique advantages:***



1. Two-piece unit consisting of a self-locking Elastic Stop nut as the latch-lock and a retainer basket.
2. Stop nut fits any standard ¼"-20 bolt. User supplies bolt in head style to suit job needs.
3. When bolt is installed, the nut is held in basket and tightened to the exact setting required by structure thickness. Infinite adjustment possible for full threaded length of the bolt.
4. Eliminates inventory of multiple length studs.
5. Bolt-nut latch-lock can be tightened or reset at any time.
6. One quarter-turn lock and unlock action; high re-usability.

***Available in ¼"-20 size only. For complete design information write to Dept. S33—1237***

**ELASTIC STOP NUT CORPORATION OF AMERICA**
2330 Vauxhall Road, Union, New Jersey

▲ For more details circle NED-851 M9 on enclosed inquiry slip ▲

# New Literature & Catalogs

### Torque Tools

Stuart D. Paterson Co.—Precision-Magnetic torque tools are used like a wrench and will click upon reaching preset torque. Torque range is 1 oz-in. to 25 lb-ft. Specifications of several tools are provided in 4-page folder.

▲ For more details circle NED-852 M9 on enclosed inquiry slip ▲

### Universal Joints & Drives

Neapco Products, Inc.—Individual sections in 16-page engineering bulletin cover light-duty slow speed hand-operated joints, medium and heavy-duty industrial drives, and farm tractor power take-off drives. Data listing is simplified to make bulletin useful for original engineering design, as well as for selection of standard parts on present applications.

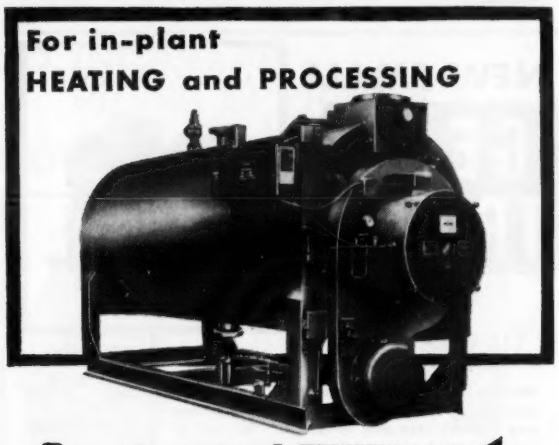
▲ For more details circle NED-853 M9 on enclosed inquiry slip ▲

### Blower Housings

Detroit Stamping Co.—Pre-engineered blower housings for blower wheels with from 3 through 11-in. diameters are subject of 16-page data catalog. Housings are completely adaptable to any width single or double-inlet wheel. Specifications and prices are furnished.

▲ For more details circle NED-854 M9 on enclosed inquiry slip ▲


For in-plant
HEATING and PROCESSING



Continental 2-PASS
AUTOMATIC BOILERS

- effectively combines higher heat exchange with maximum radiant heat absorption
- faster waterside circulation
- easier accessibility, reduced maintenance
- low first cost

. . . In a wide variety of fuel firing arrangements for comfort heating and industrial processing services.

GET THE FACTS: Write today for complete data on special features and performance. Ask for new Bulletin BE-400.

CONTINENTAL BOILER DIVISION
Boiler Engineering & Supply Co., Inc. Phoenixville, Pennsylvania

▲ For more details circle NED-855 M9 on enclosed inquiry slip ▲



NEW LOW PRICES
on
Carpenter Stainless No. 20Cb

. . . original wrought forms for super resistance to sulphuric acid

- Average 5% price reduction on all forms
- Cut - to - size orders filled promptly from warehouse stocks
- All forms now contain Columbium (at no extra cost) to eliminate need for post-annealing parts and assemblies fabricated by welding
- Best single answer to most severe corrosion problems
- Order from any Carpenter representative or distributor
- Send for latest prices and Technical Bulletin 108-A

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N.J.

▲ For more details circle NED-856 M9 on enclosed inquiry slip ▲


### High-Pressure Hydraulic Cylinders

S-P Mfg. Corp.—Catalog-Engineering Guide 117 on line of interchangeable high-pressure hydraulic cylinders features a 39 x 11-in. fold-out showing mounting diagrams. Cylinders are available in 12 bore sizes from $1\frac{1}{8}$ through 12 in. for 2000-psi operation. The 12-page catalog is a working tool for any designer faced with any hydraulic cylinder problem.

▲ For more details circle NED-857 M9 on enclosed inquiry slip ▲

### Solenoid Valves

Automatic Switch Co.—"Solenoid Valve Stock List" contains engineering information, a simple selection guide, and flow diagrams of every type ASCO valve available for immediate delivery. Valves are supplied with continuous duty coils that can be energized indefinitely without danger of overheating or failure. They are rated 115, 230, 460, and 550 v ac and 115 and 230 v dc.

▲ For more details circle NED-858 M9 on enclosed inquiry slip ▲

### Vertical Pumps

Fiese & Firstenberger Mfg. Inc.—Capacities from 15 to 4000 gpm are available in FloWay line of vertical pumps for moving volatile or nonvolatile, corrosive or noncorrosive, hot or cold, or any other type of fluid. Made for deep well or close-coupled use, they are described and illustrated in 8-page Bulletin 14. Design and performance details are given.

▲ For more details circle NED-859 M9 on enclosed inquiry slip ▲

### Selecting Soldering Flux

Alpha Metals, Inc.—Technical data sheets provided in the "Alpha Flux-Finder Guide" deal in depth with such problems as selecting the right soldering flux to prevent reoxidation of base metals, reducing oxides in solder baths, and providing high-speed fluxing for printed circuit dip soldering. Other sheets available are "Tips on Soldering" and "Guide to Automatic Soldering."

▲ For more details circle NED-860 M9 on enclosed inquiry slip ▲

### Hose Clamps

Cuyahoga Products Corp., Circle Clamp Div.—Time and cost saving Circle Clamps are easily applied and removed and are offered in a wide size range for low to medium pressure oxyacetylene, air, water, and hydraulic hose. They adapt to irregularities in hose surface. Clamps, fittings, and application tools for use with them are described and illustrated in Bulletin CC and series of data sheets.

▲ For more details circle NED-861 M9 on enclosed inquiry slip ▲

### Centrifugal Blowers

Young Machinery Co.—4-page Bulletin F-1158 aids in selection of the proper centrifugal blower for a specific use. Units are offered in 110 to 2800-cfm ratings with reversible housings that can be assembled in any position through 360 degrees.

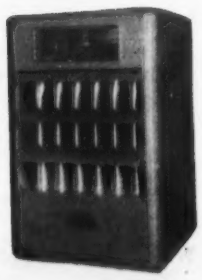
▲ For more details circle NED-862 M9 on enclosed inquiry slip ▲


FIRST CHOICE Year After Year KISCO

Tomorrow's Engineering Today

More Silent, Automatic "Gas-Heet" Recirculators

Are Being Installed Now Than Ever Before!
WHY?



Because the Kisco Unit Heater is new, improved . . . to give you a better heater . . . more for your money! Kisco gives you new cabinet styling, easier installation, quieter operation, greater fuel economy, greater heat distribution, employing proved engineering principles for rugged, dependable service with practically no maintenance. Sizes and models for every need. Write for catalogs on "Tomorrow's Unit Heaters Today."

Kisco Boiler & Engineering Co.
2400 DE KALB ST ST. LOUIS 4 MO

▲ For more details circle NED-863 M9 on enclosed inquiry slip ▲

Basic SIGNAL HORN

These are only 3 of 18 possible installation variations.

The basic horn (illustrated), with the addition of modular accessories also provides for flush installation, single or dual projector models, for surface mounting outdoors and for surface, semi-flush or concealed conduit installation indoors. The horn is self tuning, capable of withstanding continuous duty and may be adjusted for volume.

This horn can cover the majority of your signalling requirements. Ask for the FEDERAL Bulletin on the Vibratone.

FEDERAL SIGN and SIGNAL Corporation
13611 S. Western Ave.
Blue Island, Illinois

▲ For more details circle NED-864 M9 on enclosed inquiry slip ▲



NEW Manchester MILLING CUTTERS

OFFERS . . .
★ CARBIDE INSERTS
★ SHEAR CUT ACTION
★ MORE USEABLE CARBIDE
★ IT'S ECONOMICAL TO BUY AND MAINTAIN
★ QUICK SETTING GAGE INCLUDED

The new Manchester P.D.Q. Milling Cutters are made of heat treated alloy steel and are designed to handle the "tough jobs". Inserts may be changed in the machine. Exclusive double "V" clamp automatically registers the cutting tools. Designed for low H.P. machines. Special shanks available on request. Write for literature.

PORTAGE Double-Quick, Inc.
1043 SWEITZER AVENUE • AKRON 11, OHIO

▲ For more details circle NED-865 M9 on enclosed inquiry slip ▲



HOLZ Vulco-Lagged PULLEYS

GRIP BETTER to keep traction UP
DRIVE HARDER to keep production UP
WEAR LONGER to keep profits UP

HOLZ Vulco-Lagged PULLEYS step up performance and eliminate seasonal maintenance to save you dollars and downtime! Tough, abrasion-resistant lagging of specially compounded rubber is permanently bonded to metal pulleys for positive, non-slip driving. Pulleys run longer without re-lagging*; belts run longer without renewing! Have lagging applied to your pulleys, or order HOLZ Vulco-Lagged Pulleys complete. Write for detailed information today.

*Up to 10 years operation reported on HOLZ Pulleys.

VULCO-LAG PULLEY

"IF IT'S RUBBER, WE CAN MAKE IT!"
SERVING INDUSTRY FOR A QUARTER CENTURY

HOLZ RUBBER COMPANY, INC.
1135 SOUTH SACRAMENTO STREET • LODI, CALIFORNIA
Dealer inquiries solicited.

▲ For more details circle NED-866 M9 on enclosed inquiry slip ▲

*Six machines protected from dust by Torit for* **$666.15**

This Torit Dust Collector, Model 219FM, complete with accessories, was installed by the Mohr Lino Saw Co., Skokie, Ill., to protect 3 belt sanders and 3 other grinders (2 grinders hidden from view) from destructive dust—at a total cost of just $666.15!

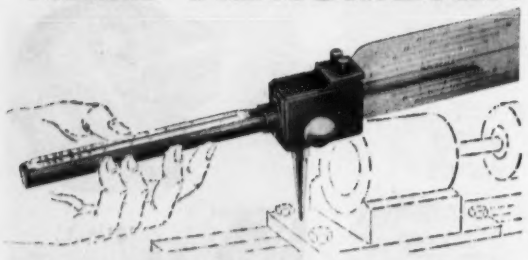
After one year's operation, Mohr Lino Saw says this about their *low-cost* Torit installation: "The Torit installation has kept our shop *cleaner*, our operators *happy*, and *protected vital* machinery."

You too can achieve greater machine protection and cleaner working conditions by trapping dangerous or valuable dust *at its source* with a completely *self contained* and *portable* Torit Dust Collector. For full details write to:

**TORIT MANUFACTURING CO.**
Dept. 203; 1133 Rankin Street, St. Paul 16, Minnesota

▲ For more details circle NED-867 M9 on enclosed inquiry slip ▲

**SPEED-UP** MACHINERY TROUBLE-SHOOTING
**TRACK DOWN** VIBRATION AND NOISE
WITH THE **KORFUND REED VIBROMETER**



Now—with this easy-to-use Vibrometer you can quickly detect and localize vibration of any machine, gear-box, bearing, motor or other component. Machine wear and overload can be spotted before costly maintenance problems occur. Used as a tachometer, it measures R.P.M. even when rotors or shafts are not readily accessible. Tuned-reed design permits direct reading of frequency and relative amplitude—no counting, no calculating. Covers full frequency range of 120 to 15,000 cpm, with high degree of accuracy. Exclusive feature: Built-in electromagnetic pickup for oscilloscope display or recording.

**$55,** complete with hardwood carrying case.

*For complete specifications, write today for Bulletin No. 70.*

**THE KORFUND COMPANY INC.**
48-35P Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

▲ For more details circle NED-868 M9 on enclosed inquiry slip ▲

*Here's the most*

**VERSATILE CRANE** *you can buy!*

*THIS BROCHURE describes the full line, complete with all specifications.*

Available in seven models, with capacities from one-half to three tons. Every Tubarcrane has a three-position built-in extension boom—no extras to buy! Pumping effort is easily adjustable. Tilt-back mast provides more area for lifting bulky loads. Write for literature today!

*Jobber Territories Available*
Also request literature on Tubar Hand Trucks, Platform Trucks, Tubarlifts

U-159-45

**Tubar** ASSURES QUALITY
DUBREE, INC. • DENNISON, OHIO
LIFTS • DUMPERS • CRANES

▲ For more details circle NED-869 M9 on enclosed inquiry slip ▲


# New Literature & Catalogs

### Process & Heat Exchange Equipment

Manning & Lewis Engineering Co.—A representative showing of heat transfer equipment, reactors, mixers, kettles, and special process machinery is provided in 8-page Bulletin 820, along with brief descriptions of all equipment. Company's organization and facilities are reviewed briefly.

▲ For more details circle NED-870 M9 on enclosed inquiry slip ▲

### Annunciator Systems

Panellit, Inc., Panalarm Div.—Well organized 52-page Catalog 100C affords quick, easy reference to 12 Panalarm annunciator systems which give immediate notification of off-normal conditions in continuous process and automatic machine operations. Mechanical and engineering data aid in selecting the proper equipment for any application.

▲ For more details circle NED-871 M9 on enclosed inquiry slip ▲

### Adhesives, Sealants, Coatings

H. B. Fuller Co.—Five sections of 40-page Booklet No. 2 descriptively cover Resiweld adhesives, plastic alloys, sealants, and coatings, and list some current uses. Liquid form adhesives are used where flowing type bonding agent is required. Paste-like plastic alloys are useful on vertical or inclined surfaces, whereas sealants form flexible, rubber-like seals which stretch and withstand vibration. Coatings produce wear and chemically resistant finishes.

▲ For more details circle NED-872 M9 on enclosed inquiry slip ▲

### Air Valve Selector

Hannifin Co.—Minimum and maximum capacity coefficients ($C_v$) for complete line of directional air control valves are now included in revised Hannifin Valve Finder. These flow factors are calculated from lab measurements of actual air flow rates through production valves and permit choosing the valve size required for any application. Other data are provided.

▲ For more details circle NED-873 M9 on enclosed inquiry slip ▲

### Measuring Tools & Instruments

Scherr-Tumico—96-page 1959-60 Catalog 25 of precision measuring tools and instruments provides detailed information on micrometers, vernier depth gages, snap gages, protractors, dial indicators, Ultra-Chex gage block sets, height gages, speed indicators, hand tachometers, dynamometers, radius dressers, optical flats, surface plates, and Magni-Ray illuminated magnifiers.

▲ For more details circle NED-874 M9 on enclosed inquiry slip ▲

### Air-Hydraulic Boosters

Flick-Reedy Corp., Miller Fluid Power Div.—Miller air-hydraulic boosters illustrated and described in 24-page Bulletin B-200P convert shop air into intensified hydraulic pressure up to 10,000 psi for operating hydraulic cylinders and other devices. Field application data, selection information, a booster calculating method, operation circuits, and an explanation of possible air savings are also provided.

▲ For more details circle NED-875 M9 on enclosed inquiry slip ▲

### Electric Power Plants

Universal Motor Co.—Revamped 8-page price list Form SE-17 covers line of gasoline and diesel electric plants. New models have been added to the line, particularly in the larger sizes. Standard models are now being offered up to 60 kw. Many accessories and extra equipment items have been added to the list.

▲ For more details circle NED-876 M9 on enclosed inquiry slip ▲

### Temperature Conversion Chart

Electric Hotpack Co.—Easily read chart converts Fahrenheit temperatures to Centigrade and provides interpolation factors for fractional readings. Reverse side gives differences between wet and dry bulb temperatures for rapid determination of relative humidity. Chart is on heavy card for wall mounting.

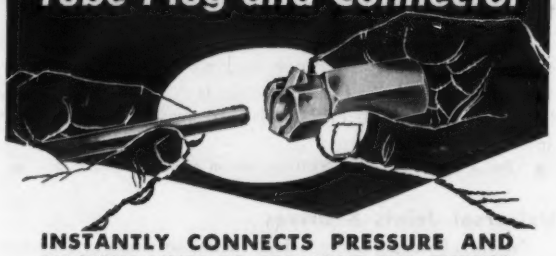
▲ For more details circle NED-877 M9 on enclosed inquiry slip ▲

### True Position Dimensioning

True position dimensioning and tolerancing, subject of this 28-page plastic-bound booklet, is a method of specifying location tolerances for features (such as holes, slots, and keys) from a specified and theoretically exact location (true position). It can be applied to any system of dimensioning where interchangeability of parts is required. A step-by-step explanation of it is contained in the booklet, priced at $3. Available upon request to Bendix Aviation Corp., Scintilla Div., Sidney, N. Y.

▲ For more details circle NED-878 M9 on enclosed inquiry slip ▲


**New "PushOn-PullOff" Tube Plug and Connector**



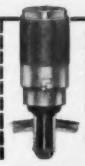
**INSTANTLY CONNECTS PRESSURE AND VACUUM LINES TO STRAIGHT END TUBING**

for AIR, WATER, STEAM, FREON, ETC.

Simply push the Connector over end of tubing and press to "stop" position. This AUTOMATICALLY locks tubing into place for a leak-proof seal. To unlock, press button and pull Connector off. For any pressure to 1000 psi; vacuum up to 25 microns. Rugged, simple, fool-proof, it saves time and labor. One end tapped for inlet connection. Stock sizes for 1/4" to 1" OD tubing. Other sizes to order. Write for Calalog and prices.

"Quick-Seal" Self Sealing Test Plug. Uses test pressure to insure leak-proof seal. Capacities to 500 psi.

Expanding Seal Test Plugs and Filling Connectors.



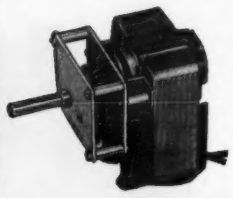
"Quick-Seal" Self Sealing Filling Connector — adapts and seals air or liquid pressure lines to openings.

mechanical mp products
**MECHANICAL PRODUCTS CORPORATION**
1724 WEST HUBBARD STREET, CHICAGO 22, ILLINOIS

▲ For more details circle NED-879 M9 on enclosed inquiry slip ▲

**NEW-SMALL GEAR TRAINS**

Approx. 1/3 Actual Size



**OPERATED by 115 Volt - 60 Cycle A. C. MOTORS**

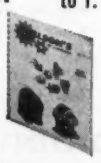
Manufacturers of small motivated devices can now obtain quickly and without tooling charges any Wilson's standard Series "A," "C" or "D" gear train unit powered by high quality shaded-pole motor for use on 115 volt, 60 cycle circuits.

Standard steel gears of 24DP and 48DP, made to close tolerances and in many sizes, produce a wide range of speed reduction ratios. Pinions are brass, splined into center holes of gears to insure concentricity and secure staking. Precision made — minimum backlash — low cost — fast delivery on standard units.

For small tooling charge, mounting brackets to accommodate other motors can be supplied.

Standard Series "A" "C" and "D" Gear Trains
3/16" or 1/4" Output Shafts
Ratios Up To Over 1,000,000 to 1.

**FREE TO ENGINEERS**



Write for book showing styles, dimensions, ratios, voltages, quantity prices.

**Wilson's of Cleveland**
P.O. Box 8995, Ft. Lauderdale, Fla.
Specialists in Small Mechanical and Electrical Components

▲ For more details circle NED-880 M9 on enclosed inquiry slip ▲

**EXTRA POWER!**

**1-IN. SQUARE DRIVE EXTRA-HEAVY-DUTY**

**Snap-on LOXOCKET® WRENCHES**

17 sockets — 1-7/16 to 3-1/8 inches. Various handles, adaptors, extensions. Ask your *Snap-on* representative or write for catalog of wrenches and tools for industrial use in the shop or in the field.

**SNAP-ON TOOLS CORPORATION**
8110-L 28th Avenue • Kenosha, Wisconsin

▲ For more details circle NED-881 M9 on enclosed inquiry slip ▲

## GRINDING MILL OUTPUT upped!

**Performance proved!** Sturtevant Air Separators, in closed circuits with grinding mills, have increased mill capacities from 25 to 300% while lowering power consumption as much as 50% in the cement industry.

**Easily adaptable to your materials!** Sizes of Sturtevant Air Separators, ranging from 3 to 18 feet dia., can be engineered to fit your specifications.

**Cost-cutting features** include rugged construction for a lifetime of low down-time service *plus* easy accessibility for quick maintenance (typified by the "OPEN-DOOR" design in other Sturtevant equipment).

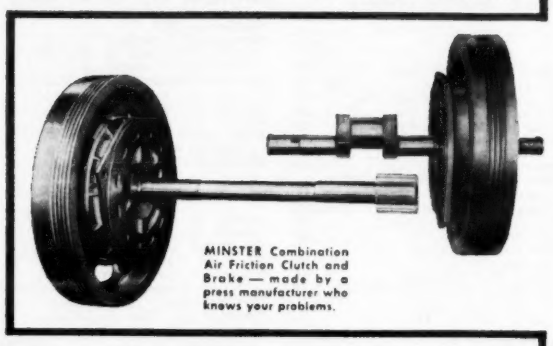
**Write for bulletins** on Sturtevant Air Separators and other custom-built equipment listed below. STURTEVANT MILL CO., 114 CLAYTON ST., BOSTON 22, MASS.

**STURTEVANT**
*Dry Processing Equipment*
The "OPEN-DOOR" to lower operating costs over more years
CRUSHERS • GRINDERS • MICRON-GRINDERS • SEPARATORS
BLENDERS • GRANULATORS • CONVEYORS • ELEVATORS

▲ For more details circle NED-882 M9 on enclosed inquiry slip ▲

## TO INCREASE PRESS EFFICIENCY

**MINSTER® CLUTCHES FOR PRESS CONVERSIONS**




***Here's why it is profitable to convert to Minster Clutches:***

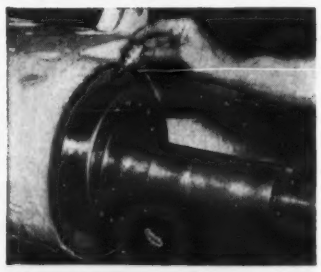
- Eliminates down time because of clutch failure
- Reduces maintenance by eliminating costly and frequent parts replacement
- Increases die life because of smooth, shock-free clutch engagement
- Reduces operator fatigue and improves safety because press is easier to operate, easier to control
- More productive cycles per hour on single cycle operation
- Easier, more rapid die setting

**Bulletin CC 57 describes Minster Clutches for press conversion. Copy by request on company letterhead.**

**THE MINSTER MACHINE COMPANY**
**MINSTER, OHIO**

▲ For more details circle NED-883 M9 on enclosed inquiry slip ▲

## "WE REPLACE 9" BEARINGS IN LESS THAN AN HOUR...AND SAVE $155 EACH"



Says David B. Cook, Jr., President, Acme Road Machinery Co., Inc. Frankfort, New York

"Replacing 9-inch bearings in the jaws of a giant rock crusher once required days to bore the housing and build up weld metal for reboring to a .0015" interference fit. Now, thanks to LOCTITE Liquid Sealant, we prepare the housing, clean and insert the bearing with a slip fit in less than one hour! Crusher jaw bearings locked in with LOCTITE have been in rugged service for many months without report of a single failure."

LOCTITE *hardens between bearing and housing to form a bond that exceeds any interference fit . . . requires no heat or mixing.* LOCTITE *is widely used for slip fitting bearings, bushings, hardened sleeves and rotors on shafts; for locking threaded fasteners or studs securely; for sealing against high-pressure fluids. Write for literature and free sample.*

**LOCTITE® SEALANT**
**AMERICAN SEALANTS CO.** 229 Woodbine St., Hartford 6, Conn.
Stocked by Bearing and Industrial Distributors

▲ For more details circle NED-884 M9 on enclosed inquiry slip ▲


# New Processes & Materials

## RUST SOLVENT
### wetting power provides penetration

Rusted nuts and bolts can be loosened and flanges, couplings, pulleys, and wheels can be easily removed from shafts by using KPO No. 1 rust solvent. Its wetting power enables it to penetrate deeply and quickly into rust-frozen surfaces. Product also lubricates parts being disengaged. Solvent is packaged in enclosed-spout 1-pt cans and 1, 5, 15, 30, and 55-gal containers. Made by **Keystone Lubricating Co.**, 3100 N. 21st St., Philadelphia 32, Pa.

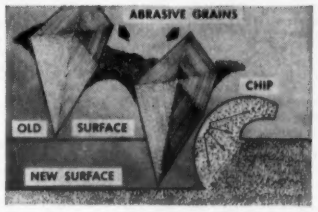
▲ For more details circle NED-885 M9 on enclosed inquiry slip ▲

## FLEXIBLE PLASTIC PASTE
### repairs holes, dents, rusted spots

Bonds that cannot be loosened by extreme vibration or climatic conditions are made with Fillerite plastic paste. Material is unaffected by gasoline, oil, salt water, light acids, and most common solvents, and will not shrink, crack, rot, dry out, rust, or mildew. It is used for repairing holes, dents, cracks, rusted areas, and other types of damage. It is particularly suited for repairs on surfaces where metals move or flex. All types of paint can be applied over it. Curing time is regulated by the quantity of Cure-It 4-20 catalyst used. Paste takes a mirror-smooth surface that can be feather-edged, sawed, drilled, milled, or tapped. Made by **Baird Dynamic Corp.**, Plastics Div., Stratford, Conn.

▲ For more details circle NED-886 M9 on enclosed inquiry slip ▲

## GRINDING WHEEL TREATMENT
### retards loading, serves as coolant




Dripping grinding wheels in Dri-Kool coats their pore surfaces with a parting lubricant which keeps chip metal from sticking to the abrasive and bond surfaces. The dry coolant treatment thus retards wheel loading. Burn-free, burr-free dry grinding of high speed steels is possible with a minimum of wheel dressing. A single treatment lasts the life of the wheel. Made by **King Graphite Products, Inc.**, 21950 Telegraph Rd., Trenton, Mich.

▲ For more details circle NED-887 M9 on enclosed inquiry slip ▲

## STYRENE PLASTIC FINISH
### spray-applied high gloss colors

Parts molded, vacuum formed, or fabricated from sheets of high impact styrene plastic can be given a high gloss finish in a range of standard and special colors with Rez-N-Lac C coating. Certain other plastics, including acrylics, can also be finished. It withstands Scotch tape and crosshatch scratch tests. Coating is offered in 1 qt and 1, 5, and 55-gal containers by **Schwartz Chemical Co.**, 50-01 Second St., Long Island City 1, N. Y.

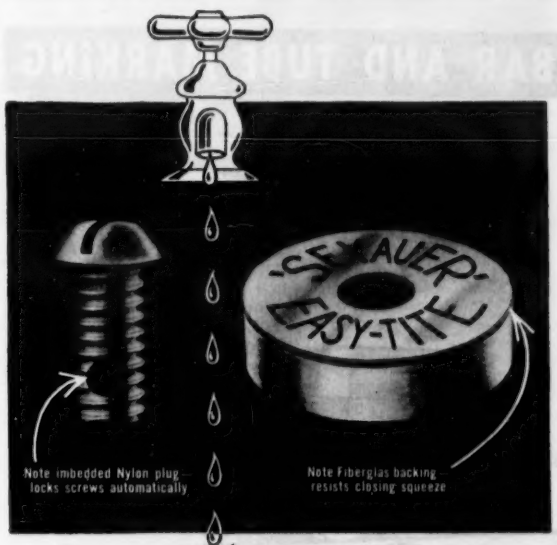
▲ For more details circle NED-888 M9 on enclosed inquiry slip ▲

## RUST INHIBITIVE PRIMER
### dries to tough finish in 15 min

Penetrating deep into rust pits and other surface irregularities, Totrust Flash-dry M-50 primer forms an intimate bond with metal surfaces. It incorporates National Lead Co.'s basic lead silico chromate for rust inhibition. Primer dries to a tough, flexible, low luster finish in 15 min. It withstands weathering, common industrial spillages, and fumes. A single coat has good exterior durability. Made by **Wilbur & Williams Co.**, 650 Pleasant St., Norwood, Mass.

▲ For more details circle NED-889 M9 on enclosed inquiry slip ▲

▲ For more details circle NED-890 M9 on enclosed inquiry slip ▲




## New Way to Stop Faucet Leaks!

★ **9-in-10 washers are fastened with TOO LONG or SHORT SCREWS thus loosen and destroy themselves. Leaks quickly follow!**

**34 YEARS OF RESEARCH REVEALS NEW SOLUTION**

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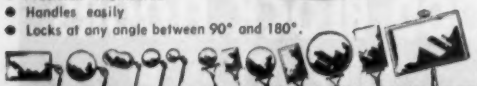

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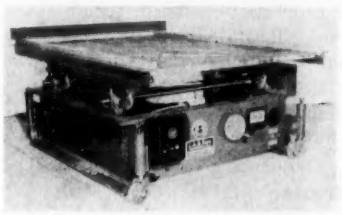

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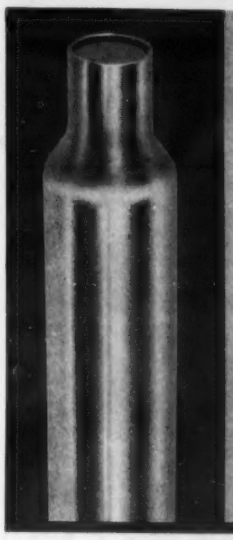

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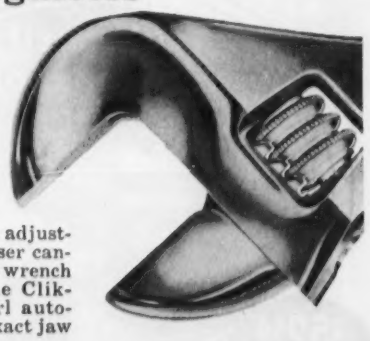

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# New Literature & Catalogs

### Air Compressors

Westinghouse Air Brake Co., Le Roi Div.—Pressures from 80 to 250 psi are available in single-stage G, single-stage YS, and two-stage YC air compressors, offered in sizes from ½ to 15 hp. Displacements, pressures, weights, dimensions, and speeds of various models and sizes are presented in illustrated Bulletin SG-2. A section is devoted to auxiliary storage tanks.

▲ For more details circle NED-904 M9 on enclosed inquiry slip ▲

### Deep-Draw Presses

Cleveland Crane & Engineering Co., Steelweld Machinery Div.—High speed operating mechanism of Speed-Draw deep-draw presses is diagrammed in Catalog 2029-A containing construction details and specifications for 200 to 1250-ton machines. They often make it possible to reduce the number of operations required to form a part. Forming, blanking, piercing, trimming, and light embossing can also be performed.

▲ For more details circle NED-905 M9 on enclosed inquiry slip ▲

### Laboratory, Pilot & Batch Ovens

Despatch Oven Co.—Tabbed for aid in locating applications, this ½-in. thick reference catalog contains extensive data and basic information on laboratory, pilot plant, and small batch type production ovens. Specifications are given for each model, as are prices and dimensional diagrams.

▲ For more details circle NED-906 M9 on enclosed inquiry slip ▲

### Decorative Gold Plating

Sel-Rex Corp.—Metallurgical properties and applications for low pH acid type Karatclad decorative gold plating are content of 7-page technical paper. Colors, control methods, color measurement, and light sources and their effects are discussed. Process is adaptable to still and barrel plating methods.

▲ For more details circle NED-907 M9 on enclosed inquiry slip ▲

### Injection Molded Delrin Parts

Gries Reproducer Corp.—Stiffness, creep resistance, good electrical and chemical properties, and high dimensional stability are properties of Delrin acetal resin, now being injection molded into tiny parts. Material properties are detailed in 8-page illustrated Folder 1001. Maximum part size is 0.03 oz and 1¼ in. long. There is no minimum size.

▲ For more details circle NED-908 M9 on enclosed inquiry slip ▲

### Low Temperature Brazing Alloys

American Brazing Alloys Corp.—Analysis and composition of various low temperature brazing alloys are found in 4-page folder. Included are low fuming bronze, nickel silver, silver solder, Phos-Sil 0, 2, 6, 6F, and 15, aluminum, and flux. Comparison charts are also included.

▲ For more details circle NED-909 M9 on enclosed inquiry slip ▲

### Radiography With Radioisotopes

Picker X-Ray Corp.—Advantages peculiar to isotopes in radiography, the selection of the proper isotope for a particular job, and methods of making radiographic exposures are discussed in illustrated 12-page Bulletin D1279. Equipment for radiographing all kinds of industrial products is described, and a chart of equivalent energies is included.

▲ For more details circle NED-910 M9 on enclosed inquiry slip ▲

### High Pressure Valves & Fittings

High Pressure Equipment Co.—Details on standard valves and fittings for 30,000 and 60,000-psi service are found in 16-page Catalog 659. Dimensional data, cross-sectional drawings, tubing sizes, and other data are included for ⅛ to 9/16-in. tubing size units.

▲ For more details circle NED-911 M9 on enclosed inquiry slip ▲

### Pipe & Electrical Markers

Seton Name Plate Co.—Permanent and durable vinyl plastic with a pressure-sensitive backing is used in making these pipe and electrical markers. Four-page Bulletin 803 lists available wordings and styles, and gives ASA recommendations for legend placement.

▲ For more details circle NED-912 M9 on enclosed inquiry slip ▲

### Spiral Conveyor

Jeffrey Mfg. Co.—Engineering data, layouts, capacity tables, selection data, and horsepower requirements for Jeffrey spiral conveyors are content of 56-page illustrated Catalog 951. Sections are devoted to couplings and shaftings, hangers, trough ends, unit drives, and accessories. Specifications are included.

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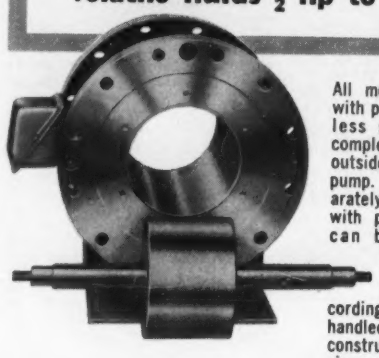

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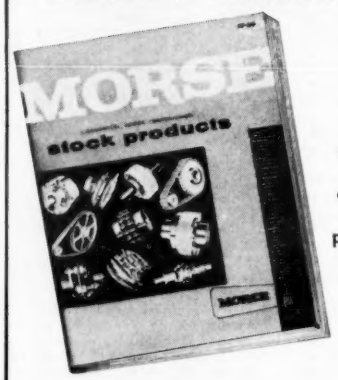


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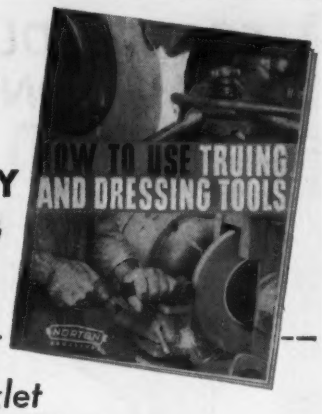


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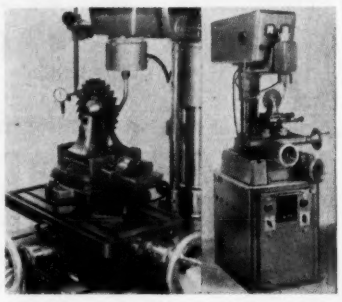

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## New Processes & Materials

### JOINT SEALING COMPOUND in can with brush-top applicator

Leak Lock flexible joint - sealing compound is now offered in this 4-oz metal can with a brush-top applicator. Compound can be applied easily in inaccessible places, such as the inside threads of small diameter pipe. It is also available in 1⅓-oz squeeze tubes and in 1-pt and 10-lb cans. Offered by **Highside Chemicals Inc.**, 14 Colfax Ave., Clifton, N. J.

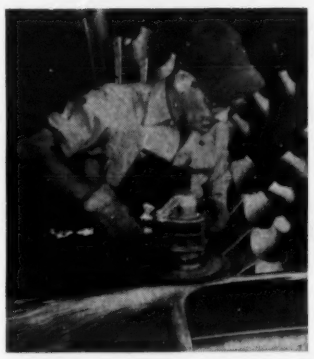
▲ For more details circle NED-920 M9 on enclosed inquiry slip ▲

### EPOXY REPAIR KITS for pipe, machines, tanks, valves

Fast setting two-component epoxy material in Carbo Fix repair kits cures to a hard, tough, tightly bonded patch. Repairs can be made to many types of equipment, pipes, tanks, valves, machinery, plumbing, gutters, and other items. Breaks, leaks, cracks, and wear can also be repaired. Carbo Fix S general repair kit has good chemical resistance and is suited for repairing most surfaces, including glass. Carbo Fix C kit is used where chemical attack is a major consideration. Each kit contains jars of resin and catalyst, Fiberglas cloth, measuring spoons, paddle, and instructions. Price of carton of six kits is $9. Made by **Carboline Co.**, 32 Hanley Industrial Court, St. Louis 17, Mo.

▲ For more details circle NED-921 M9 on enclosed inquiry slip ▲

### GRINDING ABRASIVE offered on fiber discs, cloth belts



Sustained sharpness, even under rigorous service, is afforded by Metalite Type 101 resin - bonded aluminum oxide coated abrasive, available on fiber discs and cloth belts. Discs are made in a grit range from 150 through 24; belts from 180 through 24. Modified 101T abrasive applied to fiber discs in the 24 to 60-grit range is effective on stainless steel, brass, bronze, and other alloys. Made by **Behr-Manning Co.**, Drawer 808, Troy, N. Y.

▲ For more details circle NED-922 M9 on enclosed inquiry slip ▲

### BACKING ADHESIVE achieves strong Mylar laminations

Extra heavy strength adhesive called Tytex, developed for use in company's Mirro-Brite Mylar laminations, can be used for such special applications as the adherence to wood and painted surfaces. Pressure-sensitive adhesive backings are employed in Mylar tape rolls and die cut pieces or panels which are used as decorative trim, backgrounds, and the replacement of metal parts. Developed by **Coating Products Inc.**, 101 W. Forest Ave., Englewood, N. J.

▲ For more details circle NED-923 M9 on enclosed inquiry slip ▲

### PAPER TRANSPARENTIZER improves paper for reproduction use

Opaque paper stocks are made transparent for use as masters in making offset printing plates and diazo and silver emulsion reproductions by application of CTS liquid. Besides transparentizing, it cleans and seals intermediates and one-sided materials, cleans soiled records, restores vitality to deteriorated paper, removes pencil lines and smudges from paper or linen, and provides tamperproof master file copies. Its use also provides sharp copies of blueprints, engineering drawings, and photostats. Made by **General Aniline & Film Corp.**, Ozalid Div., 42 Exchange St., Johnson City, N. Y.

▲ For more details circle NED-924 M9 on enclosed inquiry slip ▲

SAVES TIME—PROTECTS WORKERS' HANDS

This new Stearns INDOX V permanent magnet sheet fanner boosts production on sheet steel feeding or handling work — reduces the danger of hand injury — protects the sheet finish. Powerful INDOX V magnet causes sheets to repel each other and fan out automatically. The operator can remove single sheets quickly, easily. As top sheet is removed, next one moves up automatically.

INDOX V GIVES BETTER FANNING ACTION

INDOX V — an oriented ceramic magnet exclusive with Stearns — provides a stronger, better field than ordinary sheet fanner magnets. You get positive separation of dirty or oily sheets that tend to stick together.

CUSTOMERS TELL US THIS MAGNET WORKS WHERE OTHERS WON'T DO THE JOB

Henry Furnace Company, Medina, Ohio, writes, "We find your Series 1000 INDOX V sheet fanner to be *the* solution to our problem with *oily* sheets. This magnet is the finest."

*For complete details, write for Bulletin 3041L*

STEARNS MAGNETIC PRODUCTS

A DIVISION OF THE INDIANA STEEL PRODUCTS COMPANY

635 South 28th Street • Milwaukee 1, Wisconsin

▲ For more details circle NED-925 M9 on enclosed inquiry slip ▲



DELAVAN

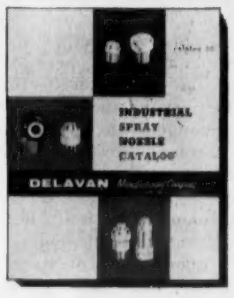
SPRAY NOZZLES for industrial use

You'll find the nozzle that's right for your specific requirements in the complete selection offered by Delavan.

Manufacturers all over the world rely on Delavan for high quality, precision industrial nozzles.

Whatever your nozzle requirements, specify Delavan.

Write for Catalog 33 for complete details and technical specifications.




DELAVAN Manufacturing Company

WEST DES MOINES • IOWA

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*Pallet Loads Move Easier with* Weld-Bilt PALLET-TYPE HYDRAULIC LIFT TRUCKS

Easy-entry booster rollers, Multi-Stroke fast-lift operation, accelerator-type lowering pedal, Anti-kick-back Safety Handle, front wheel equalizer — these and other Weld-Bilt features promise long labor-saving service on your single or double pallet-moving operations. Check all the advantages — write for bulletin No. LT857-R.

For information on our complete line write us or our nearby representative.

"Weld-Bilt" PRODUCTS

*Hydraulic Lift Tables and Trucks — Portable Elevators—Automatic Conveyor-lift Elevators — Conveyors — Skids — Special Equipment.*

WEST BEND EQUIPMENT CORPORATION

MATERIALS HANDLING ENGINEERS

311 WATER STREET • WEST BEND, WISCONSIN

▲ For more details circle NED-927 M9 on enclosed inquiry slip ▲

# NEW "42,000 series" Stearnetic* DISC BRAKES

(The choice of leading electric motor manufacturers)

Cover removed to show Stearnetic® construction.

* Stearnetic — Stearns exclusive unitized, electro-magnetic operating mechanism.

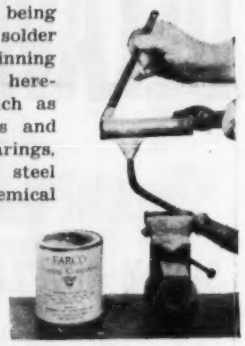
- Up to 33% shorter
- Up to 50% lighter
- Max. torque 125 to 575 lb ft
- AC or DC—all single phase — only 2 lead wires
- For standard or straight-thru shafts
- Standard motor or floor mounting — two styles of enclosure
- Exclusive Stearns 1-point adjustment for wear
- Variable torque to match application

Send for Special Information Sheet No. 2-D

Stearns ELECTRIC CORPORATION
120 NORTH BROADWAY
MILWAUKEE 2, WISCONSIN
Phone: BRoadway 2-1100

▲ For more details circle NED-928 M9 on enclosed inquiry slip ▲


## TINS ALL METALS



Difficult tinning problems are being solved with a new powdered solder containing flux, called Farco Tinning Compound which permits jobs heretofore considered impossible, such as tinning cast iron water jackets and cylinder heads, cast steel bearings, pipes, cylinders and stainless steel equipment. The powerful chemical formula will lift the oxides from aluminum, and on other metals is more drastic than ordinary acids. Makes it possible to lift the scale and tin black iron in one operation. Stability of the new powder makes it possible to judge heat on large bearings by its action in turning liquid when proper temperature for tinning is reached. Although strong enough to remove scale, dirt, and tin rusty surfaces thoroughly, it is completely stable and will not liquefy in can. When used on gasoline motors, Diesel and marine engine bearings it is reported to increase performance life 100%. The compound may be applied with either torch or soldering iron depending on thickness of metal, and any good grade of solder may be used. Packed in 1½ lb. cans, price $3.00 f.o.b.

**Have you tried #1 Acid Brushes, 25% more hair $3.50 per gross, f.o.b. Philadelphia.** *Advt.*

**FARRELLOY CO.**

**1246 North 26th St. Phila. 21, Pa.**

▲ For more details circle NED-929 M9 on enclosed inquiry slip ▲


# CLOGGED SEWERS!

*Remember the costly plumbing bill*

## CLEANS INSTANTLY!

CHICAGO—December 1st. Just introduced is a Free Booklet on a New Discovery which enables the Home Owner, Janitor, or Factory Maintenance Man to clean any Clogged Sewer Drain.

Yet anyone can operate this new **Plumbers Flushing Gun** which releases air pressure on a solid shaft of water cleaning the most stubborn stoppages up to 200 feet. TOILETS, SINKS, URINALS, BATHTUBS, FLOOR DRAINS, and HOUSE-TO-STREET SEWERS clogged with Grease, Rags, Sand, Roots, and paper melt away instantly when struck by the Hammer-like blow of this new unit.

There is no need to remove wall or pipe, or Grease Trap. A special attachment allows water to flow from the faucet through the Gun while air is released on the pipe. Vents or stacks are no obstacle, as force tends to strike wherever the water lays. But now, what is this Plumbers Flushing Gun worth in **COSTLY PLUMBING BILLS SAVED?** Tear this Ad out—and write your name and address beside it for **FREE BOOKLET.** Obey that urge. No agent will call. A postcard will do (Chicago Phone Kildare 5-1702) **MILLER SEWER ROD CO., DEPT. NED-12, 4640 N. Central Ave., Chicago 30, Illinois.**

**AMAZINGLY EFFECTIVE**

Hose attachment feeds water thru gun while air is released causing chain reaction in pipe cleaning the most stubborn stoppage.

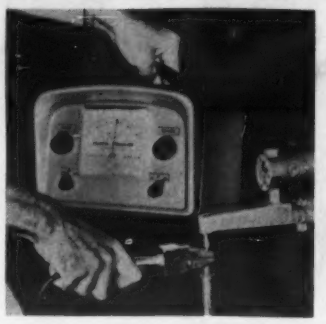
**YOURS FREE! CATALOG**

Complete Literature on all of Miller Sewer Rod Equipment including **Miller's Triple Action Grease and Root Cutter** which features Patented Self Expanding Blades for 3-12 pipe; Hand and Electric Units, Flat Rods, Toilet Augers. OBEY THAT URGE AND WRITE to above address. Compare our quality, prices.

Electric Unit cleans up to 500 ft. 2 to 12" pipe

▲ For more details circle NED-930 M9 on enclosed inquiry slip ▲


## FORCE GAGE
### measures welder electrode pressure



Panel controls for checking the batteries and calibration are built into the electronic force gage for accurately measuring the pressure exerted by resistance welder electrodes. Battery power supply, transistorized amplifier, controls, and meter are contained in a 7½-lb case with carrying handle. An 8-ft cable connects the amplifier with a transducer unit, hand-held between the welder jaws while the current is turned off. Gage can be equipped with special pickups to record other forces as dictated by customer requirements. Made by **Control Devices, Inc.**, 925 S. Eton Rd., Birmingham, Mich.

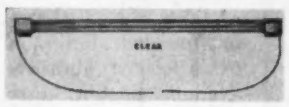
▲ For more details circle NED-931 M9 on enclosed inquiry slip ▲

## MINIATURE NYLON SCREWS
### offered in three sizes

"Watchmaker size" nylon machine screws in three new sizes are molded to a Class 2 fit. Elastic properties of the material make self-locking fits possible. Nylon also resists abrasion, corrosion, and fungus attack, besides being an electrical insulator. Screws are made in 0-80, 1-72, and 4-90 thread sizes in fillister, fillister, and headless types, respectively. Lengths are ⅜, ½, and ¼ in. Made by **Gries Reproducer Corp.**, 400 Beechwood Ave., New Rochelle, N. Y.

▲ For more details circle NED-932 M9 on enclosed inquiry slip ▲

## QUARTZ HEAT LAMPS
### infrared units heat instantly



Line of T3 quartz infrared lamps will provide thousands of degrees of heat almost instantly. Lamps are so resistant to thermal shock that ice water can be poured over a red hot lamp without cracking it. They can be used to simulate sudden temperature changes encountered by missiles, as well as for drying, baking, and dehydrating. Five lamps in 500 to 1350-w ratings for 115 and 230-v service range in length from 5 to 10 in. Small diameter permits a number of lamps to be mounted in a small space to achieve a high concentration of radiant energy. Made by **Westinghouse Electric Corp.**, Lamp Div., MacArthur Avenue, Bloomfield, N. J.

▲ For more details circle NED-933 M9 on enclosed inquiry slip ▲


# UNUSUAL BARGAINS

**Check, Measure, Inspect with this 6 POWER POCKET COMPARATOR**

(Complete with Leather Case)

MEASURES • Angles • Radii • Circles • Linear—in both decimal inches and millimeters.

Used to check layouts, machining on tools, dies, gauges; to check threads, chamfers, wear on cutting tools, etc.

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**Send Check or M.O.—or order on open account.**

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**STEREO-MICROSCOPE** Terrific Buy! American Made!

Other American made Stereos cost $250.00 to $600.00 and more! Now—save well over 50%! **Up to 3" Working Distance—Wide 3 Dimensional Field**—Used in production, in research, or at home; for inspections, examinations, counting, checking, assembling. 2 sets of objectives on rotating turret. Standard pair of wide field 10X Kellner Eyepieces give you 23 power and 40 power clear, sharp, erect image. Helical rack and pinion focusing. Interpupillary distance adjustable. SO GOOD, WE'LL SHIP ON 10-DAY FREE TRIAL. **Stock No. 85,056-AE—full price, $99.50 f.o.b. Barrington, N. J.**

**GIANT MAGNETS! TERRIFIC BARGAINS!**

War surplus—Alnico V-type! Horseshoe shape. Tremendous lifting power. 5 lb. size. Dimensions: A—3¼"; B—2¾"; C—4-3/16"; D—1¼"; E—1¼"; F—2⅝". Strength is about 2,000 Gauss. Will lift over 125 lbs.

**Stock No. 70,183-AE ..... $8.50 ppd.**

**NEW! STATIC ELECTRICITY GENERATOR**
**Educational and Lots of Fun!**

See a thrilling spark display as you set off a miniature bolt of lightning. Absolutely safe and harmless. Stands 14" high. Turn the handle and two 9" plastic discs rotate in opposite directions. Metal collector brushes pick up the static electricity, store it in the Leyden jar type condenser until discharged by the jumping spark. Countless tricks and experiments. 24 page Instruction booklet included.

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**OVER 1,000 OPTICAL ITEMS . . . Many on-the-job helps . . . quality control aids! 128 pages—hundreds of illustrations. Many war surplus bargains! Imported instruments! Lenses, Prisms, Magnifiers, Telescopes, Satellite Scopes, Microscopes, Binoculars, etc. Optics for industry, research lab, experimenters, hobbyists, math learning aids. No obligation. Write for FREE Catalog AE**

**EDMUND SCIENTIFIC CO., Barrington, N. J.**

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FLEXAUST hose and PORTOVENT retractable ducts are made of strong durable neoprene coated nylon or cotton fabrics, wire reinforced for suction or pressure uses. Sizes 1¼" to 36" i.d.

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*DISTRIBUTORS IN ALL PRINCIPAL CITIES*

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# TO CARRIER in seconds

Any load that must be hefted or hauled by *hand* takes time . . . costs money. Take ground level loading of trucks for example. One company used to do it like this: a power truck and driver to shuttle loads from warehouse to truck; two men to transfer loads from fork truck to carrier, onto hand trucks, wheel them into carrier, unload by hand again. Time 2½ hours; manhours: 7½; costs: *plenty!* Now, with a Magliner Mobile Loading Ramp on the job, the power truck driver does it alone *in an hour's time.* Savings: *plenty!* For the complete story . . .

MagLiner

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*Magline Inc., P. O. Box 1612*
*Pinconning, Michigan*

**MAGNESIUM MOBILE LOADING RAMPS**

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## INSTANT SETTING FLOOR PATCH

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut — tamp smooth — truck over! No waiting! INSTANT-USE bonds tight to old concrete — right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment!

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# INSTANT-USE

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Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and Free INSTANT-USE BROCHURE—no obligation. (Clip and attach Coupon to Co. letterhead.)

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